

Prepared for

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APPENDIX E – SHALLOW GROUNDWATER INTERIM MEASURES ASSESSMENT

2009 ANNUAL INTERIM MEASURES (IM) UPDATE AND IM ASSESSMENT REPORT

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ACRONYMS / ABBREVIATIONS

1,1,1-TCA	1,1,1-trichloroethane
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-dichloroethene
bgs	below ground surface
CMS	Corrective Measures Study
COPCs	constituents of potential concern
DO	dissolved oxygen
ft	feet
gpm	gallons per minute
IM	Interim Measure
ORP	oxidation-reduction potential
PCBs	polychlorinated biphenyls
PCE	Tetrachloroethene
QAPP	Quality Assurance Project Plan
RDX	1,3,5-trinitro-1,3,5-triazinane
SRFI	Supplemental RCRA Facility Investigation
SVOCs	semi-volatile organic compounds
TCE	Trichloroethene
TTF	Thermal Treatment Facility
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds

1. INTRODUCTION

Shallow groundwater Interim Measure (IM) activities for 2009 focused on data collection to address design needs for the upcoming Corrective Measures Study (CMS) and to continue with ongoing efforts to monitor shallow plume behavior. Critical shallow groundwater data needs identified for the CMS included the following:

- In areas where Corrective Measures may be required to address shallow groundwater contamination (i.e., within source areas), supplemental hydrogeological data (e.g., well yields, extent of capture zone, hydraulic conductivities, and degree of hydraulic connection between the diabase, overburden and metasediment, where applicable) were needed to allow for proper evaluation of treatment options; and
- Plume concentration data were required to supplement the current concentration data set, to confirm that natural attenuation of COPCs is occurring downgradient of source areas and will continue to be sufficient to prevent off-Site migration.

The objectives of the shallow groundwater IM activities for 2009 therefore included the following:

- Obtain a better understanding of the extent of hydraulic connection and capture extent within the shallow aquifer in the vicinity of known shallow groundwater source areas, and confirm the vertical connection between the diabase, overburden and metasediment (where applicable; **Section 2**);
- Through sampling of shallow groundwater and surface water, assess the potential for future risk for off-site migration of impacted groundwater/surface water, and evaluate any changes in the extent of natural attenuation and/or plume stability (**Section 3**); and
- Per the request of the United States Environmental Protection Agency (USEPA), confirm a lack of impacts for constituents that were not sampled for during the Supplemental Resource Conservation and Recovery Act Facility Investigation (SRFI) in all wells installed as part of the Data Gaps Investigation of the SRFI (**Section 3**).

As discussed in **Section 4**, the shallow groundwater IM program successfully met the objectives outlined above, and a summary of the overall findings is presented in **Section 4**.

2. SHALLOW GROUNDWATER HYDRAULIC ASSESSMENT

Shallow groundwater pump tests were conducted on a select number of wells located within proximity to source areas to evaluate the following:

- The degree of hydraulic connection (lateral and vertical) between overburden and shallow diabase bedrock, which needs to be quantified prior to consideration and design of shallow groundwater Corrective Measures (if needed); and
- The degree of hydraulic connection between shallow diabase bedrock and shallow metasediment bedrock at the bedrock interface near Building 76 where the diabase bedrock begins to pinch out and metasediment bedrock subcrops to surface.

Pump tests were conducted per protocols outlined in Section 3.4.2 of the *2007 and 2008 Annual Interim Measures (IM) Update Report and IM Assessment Work Plan* (IM Work Plan; Geosyntec, 2009a) on wells BW 5-05D (1,1,1-trichloroethane [1,1,1-TCA] source area near Building 5), DW-27I (tetrachloroethene [PCE] source area near Building 40), and SW 70-02 (1,1,1-TCA source area near Building 76), selected due to their proximity to known groundwater source areas. Pressure transducers were placed in nearby wells identified in **Table E.1**. Groundwater was extracted from the pumping well for 4 hours, at the maximum rate that could be sustained without dewatering the well, where possible. For DW-27I, the extraction rate was sustained at 2 gallons per minute (gpm) throughout the test. For both BW 5-05D and SW 70-02, flow could not be sustained at the lowest pumping rate achievable by the pump (approximately 0.5 gpm) without dewatering the well. At BW 5-05 after approximately 10 minutes of pumping, the well completely dewatered and the pump was shut off. Recovery was very slow, and pressures were monitored in BW 5-05 and surrounding monitoring wells for 4 hours. At SW 70-02, the well was dewatered after approximately 20 minutes of pumping, but recovery did occur when the pump was shut off. Because the flow rate could not be sustained without dewatering the well, in order to achieve the 4 hours pump test, the well was pumped dry 3 times and allowed to recover over the course of the test.

Figures E.1 to E.3 show the drawdown response in pumping wells and monitoring wells for the shallow groundwater pump tests. **Figure E.4** shows the location of the monitoring wells in proximity to each of the injection wells. General observations are as follows:

- BW 5-05D (**Figure E.1**): The only well where drawdown was observed in response to pumping at diabase well BW 5-05D was SW 5-03, another diabase well located approximately 100 feet (ft) downgradient from BW 5-05D in the direction of Pond 3. Drawdown in this well is limited (0.04 ft) and therefore may be natural fluctuations; however, the timing of the reduction in water levels in this well is coincident with dewatering of BW 5-05D and the drawdown is noticeably larger than that seen in the other wells, suggesting minor pumping influence.
- SW 70-02 (**Figure E.2**): Changes in water levels in all of the wells monitored during pumping at SW 70-02 were less than 0.1 ft, and based on the accuracy of the pressure transducers, and pressure trends in these wells prior to the start of pumping, it cannot be concluded that any response observed in the monitoring wells was a direct result of pumping at SW 70-02.

- DW-27I (**Figure E.3**): During pumping at diabase DW-27I, drawdown response was observed in wells SW 40-55, which is screened across the diabase and overburden, and DW-20I, which is screened in the diabase. These wells are located 125 ft and 170 ft respectively from DW-27I. IW-1, located only 9 ft from DW-27I, showed no response, suggesting that IW-1 has conductive features only within the metasediment portion of the open borehole. No drawdown response was observed in any of the nearby cross-screened or metasediment wells. SW 40-01A, screened in the overburden and also located fairly close to DW-27I (19.5 ft away), also did not show any response to pumping in the diabase at DW-27I.

2.1 Summary of Findings

The shallow groundwater pump tests confirmed the low yields of wells typical to the shallow aquifer and the lack of connection between the diabase and metasediment aquifers. Results also indicated that the lateral extent of connectivity in the overburden and diabase is limited.

3. SHALLOW GROUNDWATER AND SURFACE WATER MONITORING

The shallow groundwater and surface water monitoring program consisted of installation of several shallow wells along the southern Site boundary to confirm the lack of migration of constituents of potential concern (COPCs) from the Site. Select wells located at key locations along the core of the groundwater plume were also sampled for key COPCs to evaluate plume attenuation behavior in the shallow groundwater in 2009. The methods and results of these activities are described further in **Sections 3.1 and 3.2** below.

3.1 Monitoring Well Installation and Development

Four additional shallow monitoring wells (BW SB-02, SW SB-01, SW SB-02, and SW SB-03) were installed according to the procedures outlined in Section 3.4.3.1 of the IM Work Plan, to further delineate the plume extents and address data gaps along the southern site boundary in shallow groundwater. Three monitoring wells were originally planned to be constructed at first encountered water in diabase (to a maximum of 100 ft; BW SB-01, BW SB-02, and BW SB-03). During installation, the outer steel casing was grouted 5 ft into competent rock and shallow boreholes were advanced using air-rotary drilling methods inside the outer casing into the underlying diabase bedrock until first groundwater water was encountered, or to a maximum depth of 100 ft below ground surface (bgs). Little water was encountered in any of these boreholes during drilling, and the decision was made to advance all 3 borings to 100 ft, and allow the boreholes to sit overnight to observe if there is any water. The following day there was still no water in BW SB-01 and BW SB-03, and as a result, these boreholes were grouted up and abandoned. Minimal water was present in BW SB-02, but it appeared to be continuing to slowly recharge, and this well was constructed with the borehole open in the diabase from 18 to 100 ft bgs.

Given the lack of water in BW SB-01 and BW SB-03 and the poor yield of BW SB-02, installation of three overburden/saprolite wells screened at the interface between the saprolite/overburden and the diabase was completed in an attempt to recover groundwater at these locations along the plume. During drilling of the 3 shallow overburden wells (SW SB-01, SW SB-02, and SW SB-03), little water was encountered in the overburden, and diabase was encountered at relatively shallow depths (between 4 and 13 ft bgs). Groundwater yield at the diabase/overburden interface was low but sufficient for sampling purposes, and these wells were screened across this interval.

Borehole logs are provided in **Attachment E.1**, and details of the well construction are provided in **Table D.1** in **Appendix D**. Monitoring well locations are shown on **Figure E.4**.

3.2 Groundwater Sampling

Shallow groundwater sampling was conducted per protocols outlined in Section 3.4.3.2 of the IM Work Plan (Geosyntec, 2009a) with the objectives of:

- Monitoring contaminant concentrations near soil source areas to evaluate ongoing flux from these sources and impact to plume concentrations; and
- Monitoring concentrations of COPCs in groundwater in the core of the plume and at the Site boundary to confirm the ongoing lack of migration of COPCs from the Site in shallow groundwater and to evaluate long-term COPC attenuation trends within the core of the primary shallow groundwater plume. Wells newly installed as part of the SRFI program were also sampled for the full suite of analytes to supplement and confirm data collected as part of the SRFI.

3.2.1 Sampling Methodology

Annual shallow groundwater sampling was conducted at locations identified in **Table E.2** between 28 July and 19 August 2009 (locations shown on **Figure E.4**). Wells SW 212-01 and SW 222-02 were planned for sampling but were not sampled because they were dry. Groundwater samples were collected using low-flow sampling techniques where possible with a submersible pump or dedicated bladder pump. Wells were purged until field measurements of pH, temperature, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity had stabilized within the acceptable ranges specified in the Quality Assurance Project Plan (QAPP; Geosyntec, 2009a) for three consecutive readings. When low-flow sampling was not possible due to low well yield, the well was either purged at the lowest sustainable rate until drawdown or other water quality parameters stabilized or, following USEPA guidance (USEPA, 2002) for low-permeability formations, stagnant water above the well's open interval was purged and a grab sample collected after time (at least two hours) was given for groundwater recovery. In the event that parameters did not stabilize, grab samples

were collected if enough water could be obtained from the well. Deviations from typical sampling procedures were noted on field sampling forms provided in **Appendix F**.

3.2.2 Sampling Results

Analytical data from the annual shallow groundwater sampling event are provided in **Table E.3**. Plan view maps showing concentrations of key COPCs in shallow groundwater across the Site are provided in **Attachment E.2** and time trends showing concentration changes of COPCs in key monitoring wells are provided in **Attachment E.3**.

Plan view maps show that, in general, concentrations in shallow groundwater are highest downgradient of known source areas, such as the Thermal Treatment Facility (TTF; perchlorate and RDX), the corridor between Buildings 5 and 15 (1,1,1-TCA), Building 73/74 (1,1,1-TCA), and Building 40 (PCE), but that concentrations decrease along flow paths in a southerly direction along the core of the plume and are non-detect or just above detection limits at the Site boundary (**Figures E2.1 to E2.10**).

Concentration trends within the core of the plume originating from near the TTF and other nearby sources include the following:

- Wells near and downgradient of the TTF (BW TTU-02D, SW TTU-05, BW TTU-05, BW TTU-03D, SW 105-03D, and BW 34-01; **Figures E3.1 to E3.6 in Attachment E.3**) and further downgradient and within the core of the plume originating from the TTF (BW 14-02S, BW 16-04D, BW 28-02S and BW 28-04D; **Figures E3.7 to E3.10**) show stable concentrations of COPCs over the past three to four years, consistent with a persisting soil source. COPC concentrations exhibit a one to two order of magnitude decrease from the source area to SW 28-41 (**Figure E3.11**) located near the Site boundary (**Attachment E.2**);
- Wells near and downgradient of the Building 5 source area (SW 5-04, BW 5-05S, and SW 15-02; **Figures E3.12 to E3.14**) show stable concentrations with time, again consistent with a persisting soil source, but also demonstrate a nearly two order of magnitude decrease in 1,1,1-TCA concentrations over the 240 ft distance between SW 5-04 and SW 15-02;
- Wells near and downgradient of the Building 40 source area (including SW 40-51, SW 40-07A, SW 40-06, and SW 40-57; **Figures E3.15 to E3.18**) have generally shown stable to declining trends in concentrations over the past five years, consistent with source mass removal during the earlier Corrective Measures employed in this area in the 1990's and Interim Measures initiated in 2003; and
- Well SW 46-01, downgradient of minor soil impacts detected near Building 46, also has shown a consistent downward trend in COPCs since the early 1990's (**Figure E3.19**).

In the Research and Development Area plume, low concentrations of 1,1-dichloroethene (1,1-DCE), 1,1-dichloroethane (1,1-DCA) and trichloroethene (TCE) continue to be detected either below or just above screening levels, but perchlorate, 1,1,1-TCA, PCE and RDX were all non-detect (**Attachment E.2**). As seen on Figures E3.20 and E3.21, concentrations have decreased in BW 212-01 and BW 200-01 since the prior sampling round in 2008.

At the Site boundary, the following trends were observed:

- SW 28-41 has demonstrated downward trends in concentrations of all COPCs since the early 1990's, with some indications of a slight increase in the past year (**Figure E3.11**). These concentrations are consistent with concentrations in the early 2000's, and the increasing trend is likely a result of variability related to changing water levels rather than a change to an upward trend in concentrations;
- The only constituent detected at concentrations just above screening levels along the southern Site boundary is PCE (SW SB-03 at 0.9 J micrograms per liter [$\mu\text{g/L}$]; see **Attachment E.2 and Table E.3**)

In wells newly installed as part of the SRFI (including BW 217-01, BW 93-01, BW 86--01, BW 116-01, BW 119-01, BW 34-01, BW 40-04, BW 212-01, and BW 200-01), all were sampled for the full suite of analytes to confirm SRFI findings, per USEPA request. Polychlorinated biphenyls (PCBs) and semi-volatile organic compounds (SVOCs) were not detected in any of these wells. Metals detected were typically calcium, potassium, sodium, magnesium, manganese, iron, cobalt and vanadium. Of these, calcium, potassium, sodium and magnesium are naturally occurring nutrients, and evidence indicates that iron, cobalt, and vanadium concentrations are also naturally occurring, as described in detail in Appendix Z of the SRFI Report (Geosyntec 2009a). Metals concentrations from samples collected during the IM investigation are consistent with those detected in wells across the entire Site during the SRFI. Concentrations of the other constituents sampled (including perchlorate, nitroaromatics and VOCs) were consistent with those detected during the initial sampling event completed as part of the SRFI (Geosyntec, 2009b).

3.3 Surface Water Sampling

Sampling of surface water was completed to monitor surface water impacts at key groundwater discharge locations and at Site boundaries. **Section 3.3.1** below outlines the methodology that was followed, and findings are discussed in **Section 3.3.2**.

3.3.1 Sampling Methodology

Surface water sampling was conducted per protocols outlined in Section 3.4.3.3 of the IM Work Plan (Geosyntec, 2009a). Efforts were made to implement the streamlined semiannual sampling program at the locations presented in **Table E.2** on 19 August 2009. However, due to commonly dry conditions in late summer and early fall, several of the locations were not sampled because

of lack of water in the stream (noted in **Table E.2**). These locations will be sampled during the spring semiannual event when more water is expected to be present in the stream.

Samples were collected in accordance with the QAPP (Geosyntec, 2009a), and were obtained as grab samples by dipping a decontaminated sampling container directly into the standing (or flowing) water at the specified location. The sample aliquot was immediately transferred into a clean, laboratory provided container for shipment to the laboratory. In addition, field water quality parameter measurements including temperature, pH, specific conductance, DO, and ORP were obtained at each location using portable field instruments.

3.3.2 Sampling Results

Analytical results of the August 2009 surface water sampling event are presented in **Table E.4**. Surface water impacts are minimal, with VOC concentrations in surface water being non-detect across most of the Site. The exception is the stream east of Building 40 where some surface water impacts are observed (e.g. PCE and TCE at STR 40-15; **Table E.4**). Maximum perchlorate concentrations detected were 60 µg/L (STR 04; **Table E.4**), which is an order of magnitude below screening levels. Concentrations of VOCs are non-detect or just above detection limits (≤ 3 µg/L) at the Site boundary (STR 04). Consistent with prior sampling events, no COPCs were detected in surface water at the eastern boundary of the Site (East 01; **Table E.4**). Nitroaromatics were not detected at any of the sampling locations. These findings are consistent with prior findings discussed in the *Draft Final SRFI Report* (Geosyntec, 2009b).

4. SUMMARY OF FINDINGS

As previously discussed, the objectives of the shallow groundwater IM activities conducted in 2009 included:

- Obtain a better understanding of the extent of hydraulic connection and capture extent within the shallow aquifer in the vicinity of known shallow groundwater source areas, and confirm the vertical connection between the diabase, overburden and metasediment (where applicable);
- Assess the potential for future risk of off-site migration of impacted groundwater/surface water and evaluate any changes in the extent of natural attenuation and/or plume stability; and
- Per the request of the USEPA, confirm a lack of impacts for constituents that were not sampled for during the SRFI in all wells installed as part of the Data Gaps Investigation of the SRFI.

Overall, the shallow groundwater IM program successfully met the above objectives. The findings of the shallow groundwater IM activities can be summarized as follows:

- Hydraulic connection within the shallow aquifer is limited at best, with low well yields (typically <0.5 gpm) and limited extent of hydraulic influence even when stressing the wells to their maximum capacity. Typically, water level responses when pumping from diabase wells were observed only in other diabase wells, indicating a lack of vertical connection with the metasediment and limited vertical connection with the overburden in these areas as well.
- Consistent with the findings of the SRFI, there continues to be evidence to support conclusions of natural attenuation within the plume and containment of shallow groundwater impacts within the Site boundaries.
- Newly installed SRFI wells were confirmed to have no impacts from PCBs or SVOCs, and metals concentrations were consistent with naturally occurring concentrations observed Site-wide. Concentrations of VOCs, perchlorate and nitroaromatics were consistent with those observed during the SRFI in 2008 (Geosyntec, 2009b).
- Surface water impacts continue to be minimal, with the groundwater discharge location near Building 40 (STR 40-15) being the only location where COPCs are detected more than a few µg/L above screening levels. . VOC concentrations decrease to only a few µg/L at the Site boundary as a result of mitigation measures constructed in the 1990's.

5. REFERENCES

Geosyntec Consultants, 2009a. 2007 and 2008 Interim Measures (IM) Update Report and IM Assessment Work Plan, Atlantic Research Corporation Facility, Gainesville, Virginia, December 2009.

Geosyntec Consultants, 2009b. Draft Final Supplemental RCRA Facility Investigation Report, Atlantic Research Corporation Facility, Gainesville, Virginia, November 2009.

United States Environmental Protection Agency, 2002. Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers, EPA 542-S-02-001, May 2002.

TABLES

TABLE E.1
SUMMARY OF SHALLOW AQUIFER PUMP TESTS
Interim Measures Assessment,
Atlantic Research Corporation, Gainesville, Virginia

Pumping Test Extraction Well ¹ (extraction interval)	Date	Maximum Sustained Extraction Rate (gpm)	Maximum Drawdown in Pumping Well (ft)	Total Volume Purged from Pumping Well/Purge Time	Pressure Transducers	Manual Water Levels	Horizontal Distance to Pumping Well (ft)	Top of Open Interval (ft bgs)	Bottom of Open Interval (ft bgs)	Lithological Unit	Initial Depth to Water (ft bTOC)	Final Depth to Water (ft bTOC) ⁵	Maximum Drawdown ² (ft)
BW 5-05D ³ (D; 18-21 ft bgs)	8/10/2009	Flow could not be sustained at 0.5 gpm	7.86	5 gallons/10 minutes	BW 5-05S		0	4.5	14.5	O	2.37	2.38	0.01
					SW 5-04		52	11	21	D	6.61	6.60	-0.01
					SW 5-03		99.8	10	18	D	2.71	2.75	0.04
					BW 5-07S		110	4	11	O/D	7.03	7.04	0.01
					BW 5-07D		110	14	19	D	7.31	7.30	-0.01
					BW 6-02S		131	2.5	6.5	O	5.15	5.13	-0.02
					BW 6-02D		131	10	20	D	5.28	5.29	0.01
DW-27I (D; 51-75 ft bgs)	8/11/2009	2	24.64	500 gallons/4 hours	IW-1		9	80	350	D/MS	3.35	3.39	0.04
					SW 40-01A		19.5	NA	NA	O	6.98	7.00	0.02
					DW-34		40	100	350	MS	2.73	2.76	0.03
					SW 40-50		84.5	1.5	6	O	3.83	4.05	0.22
					SW 40-55		125	4	10	O/D	4.89	5.19	0.30
					BW 40-04		158.5	28	70	D	6.72	6.76	0.04
					SW 40-56		164.6	3	10	O	7.72	7.78	0.06
					DW-20I		170	19	50	D	2.12	2.70	0.58
					DW-20		183	190	350	D/MS	3.90	3.92	0.02
					SW 40-53		304.3	3.5	7	O	5.06	5.45	0.39
SW 70-02 ⁴ (D; 12-22 ft bgs)	8/7/2009	Flow could not be sustained at 0.5 gpm	9.25	20 gallons/4 hours	DW-28S		95	20	45	MS	25.19	25.18	-0.01
					DW-28I		95	95	115	MS	28.90	28.94	0.04
					DW-28D		95	180	210	MS	29.61	29.69	0.08
					SW 70-01		103	11	21	O	13.28	13.33	0.05
					DW-28DD		104	285	300	MS	30.42	30.50	0.08
					BW-79-01S		191	8	23	O	12.09	12.10	0.01
					BW-79-01D		191	29	39	D	15.05	15.11	0.06

Notes¹ Pump curves are provided in Figures E.1 to E.3.² Positive values indicate drawdown; negative values indicate mounding.³ Pumping was conducted for 10 minutes only because the well dewatered and did not recover during the 4-hour test.⁴ Sustainable flow rates could not be achieved without dewatering the well; SW 70-02 was pumped dry and allowed to recover 4 times over the 4-hour duration of the test.⁵ Final depth to water was measured just prior to the termination of pumping.**Acronyms:**

bgs - below ground surface

ft - feet

ft bgs - feet below ground surface

ft bTOC - feet below top of casing

gpm - gallons per minute

Lithological Unit Acronyms

D - diabase

MS - metasediment

O - overburden

O/D - overburden and diabase

TABLE E.2
2009 SHALLOW GROUNDWATER AND SURFACE WATER SAMPLING PROGRAM
Atlantic Research Corporation, Gainesville, Virginia

Aquifer	Well ID	VOCs	Perchlorate	Nitroaromatics/ Amines	SVOCs	PCBs	Metals ³	Field Parameters ¹
Wells Screened in the Shallow Aquifer	BW 14-02S	✓	✓	✓				✓
	BW 16-04D	✓	✓					✓
	BW 116-01	✓	✓	✓	✓	✓	✓	✓
	BW 119-01	✓	✓	✓	✓	✓	✓	✓
	BW 28-02S	✓	✓					✓
	BW 28-04D	✓	✓	✓				✓
	BW 200-01	✓	✓	✓	✓	✓	✓	✓
	BW 212-01	✓	✓	✓	✓	✓	✓	✓
	BW 217-01	✓	✓	✓	✓	✓	✓	✓
	BW 225-01	✓	✓	✓	✓	✓	✓	✓
	BW 34-01	✓	✓	✓	✓	✓	✓	✓
	BW 45-03S	✓	✓	✓				✓
	BW 40-04	✓	✓	✓	✓	✓	✓	✓
	BW 46-02	✓	✓	✓	✓	✓	✓	✓
	BW 5-05S	✓	✓	✓				✓
	BW 68-01	✓	✓	✓	✓	✓	✓	✓
	BW 73-01S	✓		✓				✓
	BW 86-01	✓	✓	✓	✓	✓	✓	✓
	BW 93-01	✓	✓	✓	✓	✓	✓	✓
	BW CG-01D	✓	✓	✓				✓
	BW CM-01S	✓	✓					✓
	BW TTU-02D	✓	✓	✓				✓
	BW TTU-03D	✓	✓	✓				✓
	SW 15-02	✓	✓	✓				✓
	SW 105-03D	✓	✓					✓
	SW 152-01	✓	✓	✓				✓
	SW 28-41	✓	✓					✓
	SW 200-01	✓	✓					✓
	SW 200-02	✓	✓	✓				✓
	SW 212-01 ²	Dry	Dry	Dry				Dry
	SW 222-02 ²	Dry	Dry	Dry				Dry
	SW 40-06	✓	✓					✓
	SW 40-07A	✓	✓					✓
	SW 40-51	✓	✓					✓
	SW 40-57	✓	✓					✓
	SW 46-01	✓	✓	✓				✓
	SW 47-02	✓	✓	✓				✓
	SW 47-05	✓	✓	✓				✓
	SW 5-04	✓	✓					✓
	SW 70-01		✓	✓				✓
	SW 74-02	✓	✓	✓				✓
	SW 74-06	✓	✓	✓				✓
	SW 74-07	✓	✓	✓				✓
	SW PBS-01	✓	✓	✓				✓
	SW SB-01	✓	✓	✓	✓	✓	✓	✓
	BW SB-02	✓	✓	✓	✓	✓	✓	✓
	SW SB-02	✓	✓	✓	✓	✓	✓	✓
	SW SB-03	✓	✓	✓	✓	✓	✓	✓

TABLE E.2
2009 SHALLOW GROUNDWATER AND SURFACE WATER SAMPLING PROGRAM
Atlantic Research Corporation, Gainesville, Virginia

Aquifer	Well ID	VOCs	Perchlorate	Nitroaromatics/ Amines	SVOCs	PCBs	Metals ³	Field Parameters ¹
Surface Water	STR 02	dry	dry	dry				dry
	STR 04	✓	✓	✓				✓
	STR 06	✓	✓	✓				✓
	STR A 07	✓	✓					✓
	STR 40-15	✓	✓	✓				✓
	STR 40-25		dry	dry				dry
	STR 40-27		dry	dry				dry
	West 01	dry	dry	dry				dry
	East 01		✓					✓

Notes¹ Temperature, pH, oxidation-reduction potential, dissolved oxygen, and conductivity.² Insufficient water for sampling.³ Metals sampling includes target analyte list (TAL) as dissolved/field filtered.**Acronyms**

ID - identification

PCBs - polychlorinate biphenyls

SVOCs - semi-volatile organic compounds

VOCs - volatile organic compounds

TABLE E.3
2009 Annual Shallow Groundwater Sampling Analytical Data
Atlantic Research Corporation, Gainesville, Virginia

Location Sample Date QA/QC	Screening Level Criteria ¹	BW 116-01 5-Aug-09	BW 119-01 30-Jul-09	BW 14-02S 29-Jul-09	BW 16-04D 29-Jul-09	BW 200-01 29-Jul-09	BW 212-01 28-Jul-09	BW 217-01 29-Jul-09	BW 225-01 30-Jul-09	BW 28-02S 28-Jul-09	BW 28-04D 12-Aug-09	BW 34-01 5-Aug-09	BW 34-01 5-Aug-09 DUP	BW 40-04 31-Jul-09	BW 40-04 4-Aug-09	BW 45-03S 12-Aug-09	BW 46-02 31-Jul-09	BW 5-05S 3-Aug-09
Inorganics (µg/L)																		
Perchlorate	2.6	56 J	1,700	2,700	5,900	0.20 U	0.20 U	2.5	93	6,100 J	350	3,300	3,500	NA	0.24 J	88	0.20 U	740
Metals (mg/L)																		
Aluminum, Dissolved	3.7	0.0802 U	0.0802 U	NA	NA	0.0802 U	0.0802 U	0.0802 U	NA	NA	0.0802 U	0.0802 U	0.0802 U	NA	NA	0.0802 U	NA	
Antimony, Dissolved	MDL	0.0097 U	0.0097 U	NA	NA	0.0097 U	0.0097 U	0.0097 U	NA	NA	0.0097 U	0.0097 U	0.0097 U	NA	NA	0.0097 U	NA	
Arsenic, Dissolved	MDL	0.0072 U	0.0072 U	NA	NA	0.0072 U	0.0072 U	0.0072 U	NA	NA	0.0072 U	0.0072 U	0.0072 U	NA	NA	0.0072 U	NA	
Barium, Dissolved	0.73	0.0039 J	0.0280	NA	NA	0.0014 J	0.0017 J	0.0115 U	0.0023 J	NA	NA	0.0061	0.0061	0.0030 J	NA	NA	0.0013 J	NA
Beryllium, Dissolved	0.004	0.0014 U	0.0014 U	NA	NA	0.0014 U	0.0014 U	0.0014 U	NA	NA	0.0014 U	0.0014 U	0.0014 U	NA	NA	0.0014 U	NA	
Boron, Dissolved	0.73	0.0700	0.0617	NA	NA	0.283	0.319	0.0095 J	0.137	NA	NA	0.312	0.317	0.241	NA	NA	0.563	NA
Cadmium, Dissolved	0.0018	0.0020 U	0.0020 U	NA	NA	0.0020 U	0.0020 U	0.0020 U	NA	NA	0.0020 U	0.0020 U	0.0020 U	NA	NA	0.0020 U	NA	
Calcium Metal, Dissolved	MDL	49.9	63.0	NA	NA	44.5	71.0	41.0	56.6	NA	NA	64.1	65.1	81.4	NA	NA	27.8	NA
Chromium, Dissolved	0.1	0.0034 U	0.0034 U	NA	NA	0.0034 U	0.0034 U	0.0034 U	NA	NA	0.0034 U	0.0034 U	0.0034 U	NA	NA	0.0041 J	NA	
Cobalt, Dissolved	MDL	0.0021 U	0.0021 U	NA	NA	0.0021 U	0.0021 U	0.0021 U	NA	NA	0.0021 U	0.0021 U	0.0021 U	NA	NA	0.0021 U	NA	
Copper, Dissolved	0.15	0.0027 U	0.0027 U	NA	NA	0.0027 U	0.0027 U	0.0027 U	NA	NA	0.0027 U	0.0027 U	0.0027 U	NA	NA	0.0027 U	NA	
Iron, Dissolved	2.6	0.0522 U	0.0522 U	NA	NA	2.70	2.46	0.0522 U	0.0522 U	NA	NA	0.0522 U	0.0522 U	5.40	NA	NA	0.223	NA
Lead, Dissolved	0.015	0.0069 U	0.0069 U	NA	NA	0.0069 U	0.0069 U	0.0069 U	NA	NA	0.0069 U	0.0069 U	0.0069 U	NA	NA	0.0069 U	NA	
Magnesium, Dissolved	40	28.4	34.2	NA	NA	22.4	29.4	14.5	42.1	NA	NA	22.6	22.9	35.2	NA	NA	2.85	NA
Manganese, Dissolved	0.088	0.0011 J	0.00084 U	NA	NA	0.867	0.268	0.0042 J	0.305	NA	NA	0.0766	0.0780	0.477	NA	NA	0.0246	NA
Mercury, Dissolved	0.000057	0.000056 U	0.000056 U	NA	NA	0.000056 U	0.000056 U	0.000056 U	NA	NA	0.000056 U	0.000056 U	0.000056 U	NA	NA	0.000056 U	NA	
Nickel, Dissolved	0.073	0.0022 J	0.0021 J	NA	NA	0.0018 U	0.0018 U	0.0018 U	0.0064 J	NA	NA	0.0023 J	0.0021 J	0.0018 U	NA	NA	0.0037 J	NA
Potassium, Dissolved	MDL	0.331 J	0.430 J	NA	NA	2.44	2.03	1.97	1.03	NA	NA	1.42	1.45	2.12	NA	NA	0.239 U	NA
Selenium, Dissolved	0.018	0.0089 U	0.0089 U	NA	NA	0.0089 U	0.0089 U	0.0089 U	NA	NA	0.0089 U	0.0089 U	0.0089 U	NA	NA	0.0089 U	NA	
Silver, Dissolved	0.018	0.0023 U	0.0023 U	NA	NA	0.0023 U	0.0023 U	0.0023 U	NA	NA	0.0023 U	0.0023 U	0.0023 U	NA	NA	0.0023 U	NA	
Sodium, Dissolved	12	10.2	11.5	NA	NA	36.4	19.6	18.8	19.0	NA	NA	55.8	56.3	39.4	NA	NA	68.7	NA
Strontium, Dissolved	2.2	0.111	0.173	NA	NA	0.0888	0.122	0.0938	0.144	NA	NA	0.154	0.155	0.232	NA	NA	0.148	NA
Thallium, Dissolved	MDL	0.0140 U	0.0140 U	NA	NA	0.0140 U	0.0140 U	0.0140 U	0.0140 U	NA	NA	0.0140 U	0.0140 U	0.0140 U	NA	NA	0.0140 U	NA
Vanadium, Dissolved	MDL	0.0222	0.0260	NA	NA	0.0025 U	0.0025 U	0.082	0.0148	NA	NA	0.0026 J	0.0025 J	0.0025 U	NA	NA	0.0025 U	NA
Zinc, Dissolved	1.1	0.0081 U	0.0081 U	NA	NA	0.0081 U	0.0081 U	0.0081 U	0.0081 U	NA	NA	0.0081 U	0.0081 U	0.0081 U	NA	NA	0.0081 U	NA
Nitroaromatics/amines (µg/L)																		
1,2-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.48 J	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	1.7	0.20 U
1,3,5-Trinitrobenzene	110	0.20 UJ	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U
1,3-Dinitrobenzene	0.37	0.20 UJ	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U
1,4-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U
1-Nitronaphthalene	MDL	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U
2,4,6-Trinitrotoluene	2.2	0.20 UJ	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U
2,4-Dinitrotoluene	MDL	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U
2,6-Dinitrotoluene	3.7	0.45 U	0.45 U	0.45 U	NA	0.45 U	0.45 U	0.45 U	NA	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	NA</			

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PCBs (µg/L)																		
Aroclor 1016	0.96	0.11 UJ	0.096 U	NA	NA	0.10 U	0.099 U	0.10 U	0.098 U	NA	NA	0.10 U	0.099 U	0.10 U	NA	NA	0.11 U	NA
Aroclor 1221	MDL	0.11 UJ	0.096 U	NA	NA	0.10 U	0.099 U	0.10 U	0.098 U	NA	NA	0.10 U	0.099 U	0.10 U	NA	NA	0.11 U	NA
Aroclor 1232	MDL	0.11 UJ	0.096 U	NA	NA	0.10 U	0.099 U	0.10 U	0.098 U	NA	NA	0.10 U	0.099 U	0.10 U	NA	NA	0.11 U	NA
Aroclor 1242	MDL	0.11 UJ	0.096 U	NA	NA	0.10 U	0.099 U	0.10 U	0.098 U	NA	NA	0.10 U	0.099 U	0.10 U	NA	NA	0.11 U	NA
Aroclor 1248	MDL	0.11 UJ	0.096 U	NA	NA	0.10 U	0.099 U	0.10 U	0.098 U	NA	NA	0.10 U	0.099 U	0.10 U	NA	NA	0.11 U	NA
Aroclor 1254	MDL	0.11 UJ	0.096 U	NA	NA	0.10 U	0.099 U	0.10 U	0.098 U	NA	NA	0.10 U	0.099 U	0.10 U	NA	NA	0.11 U	NA
Aroclor 1260	MDL	0.11 UJ	0.096 U	NA	NA	0.10 U	0.099 U	0.10 U	0.098 U	NA	NA	0.10 U	0.099 U	0.10 U	NA	NA	0.11 U	NA
Semi-Volatile Organic Compounds (µg/L)																		
1,1-Biphenyl	180	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
1,2,4,5-Tetrachlorobenzene	MDL	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	NA
1,2,4-Trichlorobenzene	2.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,2-Dichlorobenzene	37	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,2-Diphenylhydrazine	MDL	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
1,3-Dichlorobenzene	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,4-Dichlorobenzene	MDL	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
2,3,4,6-Tetrachlorophenol	MDL	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	NA
2,4,5-Trichlorophenol	370	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
2,4,6-Trichlorophenol	6.1	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
2,4-Dichlorophenol	11	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
2,4-Dimethylphenol	73	3 U	3 U	NA	NA	3 U	3 U	3 U	3 U	NA	NA	3 U	3 U	3 U	NA	NA	3 U	NA
2,4-Dinitrophenol	MDL	20 U	19 U	NA	NA	20 U	22 U	20 U	20 U	NA	NA	20 U	20 U	21 U	NA	NA	21 U	NA
2-Chloronaphthalene	290	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	NA
2-Chlorophenol	18	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
2-Methylnaphthalene	15	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
2-Methylphenol	180	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
2-Nitroaniline	37	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
2-Nitrophenol	2	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
3,3'-Dichlorobenzidine	MDL	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	NA
3-Nitroaniline	37	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
4,6-Dinitro-2-Methylphenol	MDL	5 U	5 U	NA	NA	5 U	5 U	5 U	5 U	NA	NA	5 U	5 U	5 U	NA	NA	5 U	NA
4-Bromophenyl Phenyl Ether	MDL	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
4-Chloro-3-Methylphenol	370	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
4-Chloroaniline	MDL	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
4-Chlorophenyl Phenyl Ether	MDL	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	NA
4-Methylphenol	18	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	NA
4-Nitroaniline	3.4	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
4-Nitrophenol	MDL	10 U	10 U	NA	NA	10 U	11 U	10 U	10 U	NA	NA	10 U	10 U	10 U	NA	NA	10 U	NA
Acenaphthene	220	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
Acenaphthylene	5.2	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
Acetophenone	370	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	NA
Anthracene	1,100	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
Atrazine	MDL	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	NA
Benzaldehyde	370	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
Benzidine	MDL	20 U	19 U	NA	NA	20 U	22 U	20 U	20 U	NA	NA	20 U	20 U	21 U	NA	NA	21 U	NA
Benzo (A) Anthracene	MDL	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	NA
Benzo (A) Pyrene																		

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Chrysene	2.9	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Dibenzo (A,H) Anthracene	MDL	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Dibenzofuran	3.7	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Diethyl Phthalate	2,900	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	NA
Dimethyl Phthalate	7,300	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	NA
Di-N-Butyl Phthalate	370	2 U	2 U	NA	NA	5 J	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	NA
Di-N-Octyl Phthalate	13	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	NA
Fluoranthene	150	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Fluorene	150	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Hexachlorobenzene	MDL	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Hexachlorobutadiene	MDL	1 U	1 U	2 U	2 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	1 U	NA	NA	2 U	1 U
Hexachlorocyclopentadiene	22	5 U	5 U	NA	NA	5 U	5 U	5 U	NA	NA	5 U	5 U	5 U	5 U	NA	NA	5 U	NA
Hexachloroethane	4.8	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Indeno (1,2,3-Cd) Pyrene	MDL	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Isophorone	71	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Naphthalene	MDL	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
N-Nitroso-Di-N-Propylamine	MDL	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
N-Nitrosodiphenylamine	14	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	NA	NA	2 U	NA
Pentachlorophenol	MDL	3 U	3 U	NA	NA	3 U	3 U	3 U	NA	NA	3 U	3 U	3 U	3 U	NA	NA	3 U	NA
Phenanthren	MDL	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Phenol	1100	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Pyrene	110	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	NA	NA	1 U	NA
Tentatively Identified Compounds (µg/L)																		
1,2-Dichloro-1,1,2-Trifluoroethane (TIC)	MDL	NA	NA	NA	NA	NA	NA	NA	2 J	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dioxane (TIC)	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6 J	NA	NA	NA	NA
Cyclic octaatomic sulfur (TIC)	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9 J	NA	NA	NA	NA
Volatile Organic Compounds (µg/L)																		
1,1,1,2-Tetrachloroethane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U
1,1,1-Trichloroethane	200	0.8 U	0.8 U	29	23	0.8 U	1 J	0.8 U	10	13	71	2 J	2 J	0.8 U	NA	0.8 U	0.8 U	2,300
1,1,2,2-Tetrachloroethane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,1,2-Trichloroethane	MDL	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NA	0.8 U	0.8 U	1 J
1,1-Dichloroethane	2.4	1 U	1 U	3 J	4 J	6	9	1 U	3 J	4 J	7	5	5	2 J	NA	2 J	1 U	39
1,1-Dichloroethene	7	0.8 U	1 J	15	19	6	11	0.8 U	26	17	42	0.8 U	0.8 U	7	NA	1 J	0.8 U	94 J
1,1-Dichloropropene	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,2,3-Trichlorobenzene	2.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,2,3-Trichloropropane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,2,4-Trimethylbenzene	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane (Dbcp)	MDL	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	2 U
1,2-Dibromoethane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,2-Dichloroethane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,2-Dichloropropane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,3,5-Trimethylbenzene	37	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
1,4-Dioxane	6.1	70 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	NA	70 U	70 U	70 U
2,2-Dichloropropane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
2-Butanone	710	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	3 U	3 U	3 U
2-Chloroethyl Vinyl Ether	MDL	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	NA	2 UR	2 UR	2 UR
2-Chlorotoluene	73	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
2-Hexanone	4.7	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	3 U	3 U	3 U
4-Chlorotoluene	260	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
4-Methyl-2-Pentanone	200	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	3 U	3 U	3 U
Acetone	2,200	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	NA	6 U	6 U	6 U
Acrolein	MDL	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	NA	40 U	40 U	40 U
Acrylonitrile	MDL	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	NA	4 U	4 U	4 U

TABLE E.3
2009 Annual Shallow Groundwater Sampling Analytical Data
Atlantic Research Corporation, Gainesville, Virginia

Location Sample Date QA/QC	Screening Level Criteria ¹	BW 116-01 5-Aug-09	BW 119-01 30-Jul-09	BW 14-02S 29-Jul-09	BW 16-04D 29-Jul-09	BW 200-01 29-Jul-09	BW 212-01 28-Jul-09	BW 217-01 29-Jul-09	BW 225-01 30-Jul-09	BW 28-02S 28-Jul-09	BW 28-04D 12-Aug-09	BW 34-01 5-Aug-09	BW 34-01 5-Aug-09 DUP	BW 40-04 31-Jul-09	BW 40-04 4-Aug-09	BW 45-03S 12-Aug-09	BW 46-02 31-Jul-09	BW 5-05S 3-Aug-09	
Benzene	MDL	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	
Bromobenzene	8.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Bromodichloromethane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Bromoform	8.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Bromomethane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Carbon Disulfide	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Carbon Tetrachloride	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Chlorobenzene	9.1	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NA	0.8 U	0.8 U	0.8 U	
Chlorobromomethane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Chloroethane	2,100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Chloroform	MDL	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NA	0.8 U	0.8 U	0.8 J	
Chloromethane	19	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
cis-1,2-Dichloroethene	37	0.8 U	0.8 U	34	14	0.8 U	11 J	8	0.9 J	0.8 J	77	NA	150	3 J	12				
cis-1,3-Dichloropropene	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Cyclohexane	1,300	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	2 U	
Cymene	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Dibromochloromethane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Dibromomethane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Dichlorodifluoromethane	39	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	2 U	
Ethylbenzene	1.5	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NA	0.8 U	0.8 U	0.8 U	
Freon 113	5,900	2 U	2 U	38	25	2 U	2 U	2 U	11	24	2 U	10 J	10 J	2 U	NA	20	2 U	9 J	
Isopropylbenzene	68	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
m&p-Xylene	20	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NA	0.8 U	0.8 U	0.8 U	
Methyl Acetate	3,700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Methyl Tert-Butyl Ether	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	
Methylcyclohexane	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Methylene Chloride	4.8	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	2 U	
N-Butylbenzene	8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
N-Propylbenzene	130	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
O-Xylene	120	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NA	0.8 U	0.8 U	0.8 U	
Sec-Butylbenzene	8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Styrene	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
tert-Butylbenzene	8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Tetrachloroethene	MDL	0.8 U	0.8 U	300	190	0.8 U	140	95	13	13	490	NA	260	0.8 U	140				
Tetrahydrofuran	9.5	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	NA	4 U	4 U	4 U	
Toluene	230	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	NA	0.7 U	0.7 U	0.7 U	
trans-1,2-Dichloroethene	11	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NA	0.9 J	0.8 U	0.8 U	
trans-1,3-Dichloropropene	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	
Trichloroethene	2	1 U	1 U	1 U	37	13	1 J	8	1 U	6	25	17	1 U	1 U	260	NA	33	1 J	17
Trichlorofluoromethane	130	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	2 U	
Vinyl Chloride	MDL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	4 J	1 U	1 U	
Geochemical Parameters																			
Dissolved Oxygen (mg/L)	NA	1.56	1.74	3.11	4.39	0.14	0.35	0.23	1.47	3.33	2.63	0.17	NA	0.12	0.1	0.29	0.17	2.74	
Oxidation-Reduction Potential (mV)	NA	68.8	378.6	117.3	91.9	-181.9	-120.3	79.3	87.3	84	-9.8	-39							

TABLE E.3
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Atlantic Research Corporation, Gainesville, Virginia

Location Sample Date QA/QC	Screening Level Criteria ¹	BW 5-05S 3-Aug-09 DUP	BW 68-01 6-Aug-09	BW 73-01S 12-Aug-09	BW 86-01 30-Jul-09	BW 86-01 30-Jul-09 DUP	BW 93-01 5-Aug-09	BW CG-01D 11-Aug-09	BW CM-01S 11-Aug-09	BW SB-02 6-Aug-09	BW TTU-02D 11-Aug-09	BW TTU-03D 13-Aug-09	BW TTU-03D 13-Aug-09 DUP	SW 105-03D 12-Aug-09	SW 15-02 17-Aug-09	SW 15-02 17-Aug-09 DUP	SW 152-01 13-Aug-09	SW 200-01 30-Jul-09
Inorganics (µg/L)																		
Perchlorate	2.6	750	0.20 U	NA	0.73 J	0.93 J	13	24,000	42,000	0.51 J	4,900	200	200	19,000	470	470	2.0 U	20 U
Metals (mg/L)																		
Aluminum, Dissolved	3.7	NA	0.0828 J	NA	0.0802 U	0.0802 U	0.0802 U	NA	NA	0.0802 U	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved	MDL	NA	0.0097 U	NA	0.0097 U	0.0097 U	0.0097 U	NA	NA	0.0097 U	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic, Dissolved	MDL	NA	0.0072 U	NA	0.0072 U	0.0072 U	0.0072 U	NA	NA	0.0072 U	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved	0.73	NA	0.00071 J	NA	0.0149	0.0143	0.0213	NA	NA	0.0137	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved	0.004	NA	0.0014 U	NA	0.0014 U	0.0014 U	0.0014 U	NA	NA	0.0014 U	NA	NA	NA	NA	NA	NA	NA	NA
Boron, Dissolved	0.73	NA	2.12	NA	0.665	0.667	0.0703	NA	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium, Dissolved	0.0018	NA	0.0020 U	NA	0.0020 U	0.0020 U	0.0020 U	NA	NA	0.0020 U	NA	NA	NA	NA	NA	NA	NA	NA
Calcium Metal, Dissolved	MDL	NA	3.86	NA	85.5	85.9	66.6	NA	NA	168	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Dissolved	0.1	NA	0.0034 U	NA	0.0034 U	0.0034 U	0.0034 U	NA	NA	0.0034 U	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt, Dissolved	MDL	NA	0.0021 U	NA	0.0021 U	0.0023 J	0.0021 U	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved	0.15	NA	0.0027 U	NA	0.0027 U	0.0028 J	0.0027 U	NA	NA	0.0039 J	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved	2.6	NA	0.0522 U	NA	0.300	0.316	0.0522 U	NA	NA	0.0522 U	NA	NA	NA	NA	NA	NA	NA	NA
Lead, Dissolved	0.015	NA	0.0069 U	NA	0.0069 U	0.0069 U	0.0069 U	NA	NA	0.0069 U	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved	40	NA	0.194	NA	22.8	22.9	13.9	NA	NA	71.1	NA	NA	NA	NA	NA	NA	NA	NA
Manganese, Dissolved	0.088	NA	0.0035 J	NA	0.176	0.161	0.0012 J	NA	NA	0.175	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Dissolved	0.000057	NA	0.000056 U	NA	0.000056 U	0.000056 U	0.000056 U	NA	NA	0.000056 U	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved	0.073	NA	0.0018 U	NA	0.0074 J	0.0067 J	0.0018 U	NA	NA	0.0192	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved	MDL	NA	0.619	NA	1.25	1.32	0.882	NA	NA	14.9	NA	NA	NA	NA	NA	NA	NA	NA
Selenium, Dissolved	0.018	NA	0.0089 U	NA	0.0089 U	0.0089 U	0.0089 U	NA	NA	0.0089 U	NA	NA	NA	NA	NA	NA	NA	NA
Silver, Dissolved	0.018	NA	0.0023 U	NA	0.0023 U	0.0023 U	0.0023 U	NA	NA	0.0023 U	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved	12	NA	43.1	NA	13.1	13.1	12.4	NA	NA	70.4	NA	NA	NA	NA	NA	NA	NA	NA
Strontium, Dissolved	2.2	NA	0.0225	NA	0.364	0.365	0.0851	NA	NA	0.516	NA	NA	NA	NA	NA	NA	NA	NA
Thallium, Dissolved	MDL	NA	0.0140 U	NA	0.0140 U	0.0140 U	0.0140 U	NA	NA	0.0140 U	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium, Dissolved	MDL	NA	0.0025 U	NA	0.0025 U	0.0025 U	0.0066	NA	NA	0.0025 U	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved	1.1	NA	0.0081 U	NA	0.0081 U	0.0081 U	0.0081 U	NA	NA	0.0081 U	NA	NA	NA	NA	NA	NA	NA	NA
Nitroaromatics/amines (µg/L)																		
1,2-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	NA
1,3,5-Trinitrobenzene	110	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.47 U	0.29 U	NA	0.20 U	0.20 U	0.20 U	0.20 U
1,3-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U
1,4-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U
1-Nitronaphthalene	MDL	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U
2,4,6-Trinitrotoluene	2.2	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U
2,4-Dinitrotoluene	MDL	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U
2,6-Dinitrotoluene	3.7	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	NA	0.45 U	0.45 U	0.45 U	0.45 U	NA	0.45 U	0.45 U	0.45 U	0.45 U
2-Amino-4,6-Dinitrotoluene	7.3	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U	0.20 U	0.20 U
2-Nitrotoluene	0.31	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	0.25 U	0.25 U	0.25 U	0.25 U	NA	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	MDL	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	NA	0.40 U	0.40 U	0.40 U	0.40 U	NA	0.40 U	0.40 U</		

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PCBs (µg/L)																		
Aroclor 1016	0.96	NA	0.097 U	NA	0.098 U	0.097 U	0.098 U	NA	NA	0.10 U	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1221	MDL	NA	0.097 U	NA	0.098 U	0.097 U	0.098 U	NA	NA	0.10 U	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1232	MDL	NA	0.097 U	NA	0.098 U	0.097 U	0.098 U	NA	NA	0.10 U	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1242	MDL	NA	0.097 U	NA	0.098 U	0.097 U	0.098 U	NA	NA	0.10 U	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1248	MDL	NA	0.097 U	NA	0.098 U	0.097 U	0.098 U	NA	NA	0.10 U	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1254	MDL	NA	0.097 U	NA	0.098 U	0.097 U	0.098 U	NA	NA	0.10 U	NA	NA	NA	NA	NA	NA	NA	
Aroclor 1260	MDL	NA	0.097 U	NA	0.098 U	0.097 U	0.098 U	NA	NA	0.10 U	NA	NA	NA	NA	NA	NA	NA	
Semi-Volatile Organic Compounds (µg/L)																		
1,1-Biphenyl	180	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
1,2,4,5-Tetrachlorobenzene	MDL	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
1,2,4-Trichlorobenzene	2.3	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,2-Dichlorobenzene	37	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,2-Diphenylhydrazine	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
1,3-Dichlorobenzene	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	
1,4-Dichlorobenzene	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	
2,3,4,6-Tetrachlorophenol	MDL	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
2,4,5-Trichlorophenol	370	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
2,4,6-Trichlorophenol	6.1	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
2,4-Dichlorophenol	11	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
2,4-Dimethylphenol	73	NA	3 U	NA	3 U	3 U	3 U	NA	NA	3 U	NA	NA	NA	NA	NA	NA	NA	
2,4-Dinitrophenol	MDL	NA	21 U	NA	19 U	19 U	20 U	NA	NA	19 U	NA	NA	NA	NA	NA	NA	NA	
2-Chloronaphthalene	290	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
2-Chlorophenol	18	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
2-Methylnaphthalene	15	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
2-Methylphenol	180	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
2-Nitroaniline	37	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
2-Nitrophenol	2	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
3,3'-Dichlorobenzidine	MDL	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
3-Nitroaniline	37	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
4,6-Dinitro-2-Methylphenol	MDL	NA	5 U	NA	5 U	5 U	5 U	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	
4-Bromophenyl Phenyl Ether	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
4-Chloro-3-Methylphenol	370	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
4-Chloroaniline	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
4-Chlorophenyl Phenyl Ether	MDL	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
4-Methylphenol	18	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
4-Nitroaniline	3.4	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
4-Nitrophenol	MDL	NA	11 U	NA	10 U	10 U	10 U	NA	NA	10 U	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene	220	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene	5.2	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Acetophenone	370	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
Anthracene	1,100	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Atrazine	MDL	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
Benzaldehyde	370	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Benzidine	MDL	NA	21 U	NA	19 U	19 U	20 U	NA	NA	19 U	NA	NA	NA	NA	NA	NA	NA	
Benzo (A) Anthracene	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Benzo (A) Pyrene	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Benzo (B) Fluoranthene	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Benzo (G,H,I) Perylene	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Benzo (K) Fluoranthene	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Benzyl Butyl Phthalate	35	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA						

TABLE E.3
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Atlantic Research Corporation, Gainesville, Virginia

Location Sample Date QA/QC	Screening Level Criteria ¹	BW 5-05S 3-Aug-09 DUP	BW 68-01 6-Aug-09	BW 73-01S 12-Aug-09	BW 86-01 30-Jul-09	BW 86-01 30-Jul-09 DUP	BW 93-01 5-Aug-09	BW CG-01D 11-Aug-09	BW CM-01S 11-Aug-09	BW SB-02 6-Aug-09	BW TTU-02D 11-Aug-09	BW TTU-03D 13-Aug-09	BW TTU-03D 13-Aug-09 DUP	SW 105-03D 12-Aug-09	SW 15-02 17-Aug-09	SW 15-02 17-Aug-09 DUP	SW 152-01 13-Aug-09	SW 200-01 30-Jul-09
Chrysene	2.9	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Dibenzo (A,H) Anthracene	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Dibenzofuran	3.7	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Diethyl Phthalate	2,900	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
Dimethyl Phthalate	7,300	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
Di-N-Butyl Phthalate	370	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
Di-N-Octyl Phthalate	13	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene	150	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Fluorene	150	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Hexachlorobenzene	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Hexachlorobutadiene	MDL	5 U	1 U	2 U	1 U	1 U	1 U	2 U	2 U	1 U	2 U	2 U	2 U	4 U	4 U	2 U	2 U	
Hexachlorocyclopentadiene	22	NA	5 U	NA	5 U	5 U	5 U	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	
Hexachloroethane	4.8	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Indeno (1,2,3-Cd) Pyrene	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Isophorone	71	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
N-Nitroso-Di-N-Propylamine	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
N-Nitrosodiphenylamine	14	NA	2 U	NA	2 U	2 U	2 U	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	
Pentachlorophenol	MDL	NA	3 U	NA	3 U	3 U	3 U	NA	NA	3 U	NA	NA	NA	NA	NA	NA	NA	
Phenanthren	MDL	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Phenol	1100	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Pyrene	110	NA	1 U	NA	1 U	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	
Tentatively Identified Compounds (µg/L)																		
1,2-Dichloro-1,1,2-Trifluoroethane (TIC)	MDL	NA	NA	NA	NA	NA	NA	82 J	NA	NA	NA	33 J	37 J	NA	NA	NA	NA	
1,4-Dioxane (TIC)	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cyclic octaatomic sulfur (TIC)	MDL	NA	NA	NA	NA	NA	NA	5 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Volatile Organic Compounds (µg/L)																		
1,1,1,2-Tetrachloroethane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,1,1-Trichloroethane	200	1,800	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	1 J	20	0.8 U	11	1 J	1 J	4 J	1,600	1,600	0.8 U	0.8 U
1,1,2,2-Tetrachloroethane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,1,2-Trichloroethane	MDL	2 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	2 U	0.8 U	0.8 U	
1,1-Dichloroethane	2.4	32	1 U	1 U	2 J	2 J	1 U	100	11	1 U	1 J	4 J	4 J	2 J	25	25	1 U	5
1,1-Dichloroethene	7	65 J	0.8 U	0.8 U	2 J	2 J	0.8 U	10	26	0.8 U	0.8 U	4 J	4 J	11	74	75	0.8 U	5 J
1,1-Dichloropropene	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,2,3-Trichlorobenzene	2.9	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,2,3-Trichloropropane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,2,4-Trimethylbenzene	1.5	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,2-Dibromo-3-Chloropropane (Dbcp)	MDL	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	4 U	2 U	2 U	
1,2-Dibromoethane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,2-Dichloroethane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,2-Dichloropropane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,3,5-Trimethylbenzene	37	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
1,4-Dioxane	6.1	180 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	70 U	140 U	140 U	70 U	70 U	
2,2-Dichloropropane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
2-Butanone	710	8 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	6 U	6 U	3 U	3 U	
2-Chloroethyl Vinyl Ether	MDL	5 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	2 UR	4 UR	4 UR	2 UR	2 UR	
2-Chlorotoluene	73	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
2-Hexanone	4.7	8 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	6 U	6 U	3 U	3 U	
4-Chlorotoluene	260	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
4-Methyl-2-Pentanone	200	8 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	6 U	6 U	3 U	3 U	
Acetone	2,200	15 U	6 U	6 U	6 U	6 U	6 U	6 U	13 J	6 U	6 U	6 U	6 U	12 U	12 U	6 U	6 U	
Acrolein	MDL	100 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	80 U	80 U	40 U	40 U	
Acrylonitrile	MDL	10 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	8 U	8 U	4 U	4 U	

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Benzene	MDL	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 J	0.5 U	0.5 U	0.5 U	0.9 J	0.9 J	0.5 U	1 U	1 U	0.5 U	0.5 U	
Bromobenzene	8.8	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	
Bromodichloromethane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Bromoform	8.5	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Bromomethane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Carbon Disulfide	100	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Carbon Tetrachloride	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Chlorobenzene	9.1	2 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	1 J	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	2 U	0.8 U	0.8 U	
Chlorobromomethane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Chloroethane	2,100	3 U	1 U	1 U	1 U	1 U	1 U	5	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Chloroform	MDL	2 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	2 U	0.8 U	0.8 U	
Chloromethane	19	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
cis-1,2-Dichloroethene	37	10 J	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	7	45	0.8 U	2 J	790	810	5	4 J	4 J	0.8 U	0.8 U
cis-1,3-Dichloropropene	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Cyclohexane	1,300	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	4 U	2 U	2 U	2 U	
Cymene	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Dibromochloromethane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Dibromomethane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Dichlorodifluoromethane	39	5 U	2 U	2 U	2 U	2 U	2 U	16	2 U	2 U	2 U	3 J	3 J	2 U	4 U	4 U	2 U	2 U	
Ethylbenzene	1.5	2 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	2 U	0.8 U	0.8 U	0.8 U	
Freon 113	5,900	5 J	2 U	2 U	2 U	2 U	2 U	610	8 J	2 U	2 U	150	160	100	4 U	4 U	2 U	2 U	
Isopropylbenzene	68	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
m&p-Xylene	20	2 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	2 U	0.8 U	0.8 U	0.8 U	
Methyl Acetate	3,700	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Methyl Tert-Butyl Ether	12	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	
Methylcyclohexane	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Methylene Chloride	4.8	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	4 U	2 U	2 U	2 U	
N-Butylbenzene	8	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
N-Propylbenzene	130	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
O-Xylene	120	2 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	2 U	0.8 U	0.8 U	0.8 U	
Sec-Butylbenzene	8	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Styrene	100	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
tert-Butylbenzene	8	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Tetrachloroethene	MDL	110	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	28	270	0.8 U	26	610	610	46	54	0.8 U	0.8 U	
Tetrahydrofuran	9.5	10 U	4 U	4 U	4 U	4 U	4 U	13	4 U	4 U	4 U	4 U	4 U	8 U	8 U	4 U	4 U	4 U	
Toluene	230	2 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	1 U	1 U	0.7 U	0.7 U	0.7 U	
trans-1,2-Dichloroethene	11	2 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	4 J	4 J	0.8 U	2 U	2 U	0.8 U	0.8 U	
trans-1,3-Dichloropropene	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	
Trichloroethene	2	13	1 U	1 U	1 U	1 U	1 U	1 U	2 J	5 J	1 U	1 U	280	270	1 U	7 J	7 J	1 U	8
Trichlorofluoromethane	130	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	4 U	2 U	2 U	2 U	
Vinyl Chloride	MDL	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	31	34	1 U	2 U	2 U	1 U	1 U
Geochemical Parameters																			
Dissolved Oxygen (mg/L)	NA	NA	1.98	0.7	0.31	NA	4.5	NA	NA	3.37	NA	0.1	NA	2.16	0.38	NA	0.82	0.3	
Oxidation-Reduction Potential (mV)	NA	NA	3.7	-53.2	-78.1	NA	85.1	NA	NA	11.9	NA	-53	NA</						

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Inorganics (µg/L)																		
Perchlorate	2.6	0.20 U	560	0.64 J	620	15	20	NA	660	970	0.20 U	NA	800	NA	150	NA	720	72
Metals (mg/L)																		
Aluminum, Dissolved	3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic, Dissolved	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved	0.73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron, Dissolved	0.73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium, Dissolved	0.0018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium Metal, Dissolved	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Dissolved	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt, Dissolved	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved	2.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead, Dissolved	0.015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese, Dissolved	0.088	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Dissolved	0.000057	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved	0.073	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium, Dissolved	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver, Dissolved	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium, Dissolved	2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium, Dissolved	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium, Dissolved	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroaromatics/amines (µg/L)																		
1,2-Dinitrobenzene	0.37	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	0.20 U	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	0.20 U
1,3,5-Trinitrobenzene	110	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	0.20 U	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	0.20 U
1,3-Dinitrobenzene	0.37	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	0.20 U	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	0.20 U
1,4-Dinitrobenzene	0.37	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	0.20 U	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	0.20 U
1-Nitronaphthalene	MDL	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	0.20 U	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	0.20 U
2,4,6-Trinitrotoluene	2.2	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	0.20 U	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	0.20 U
2,4-Dinitrotoluene	MDL	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	0.20 U	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	0.20 U
2,6-Dinitrotoluene	3.7	0.45 U	NA	NA	NA	NA	NA	0.45 U	NA	0.45 U	0.45 U	NA	NA	0.45 U	NA	NA	0.45 U	0.45 U
2-Amino-4,6-Dinitrotoluene	7.3	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	0.20 U	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	0.20 U
2-Nitrotoluene	0.31	0.25 U	NA	NA	NA	NA	NA	0.25 U	NA	0.25 U	0.25 U	NA	NA	0.25 U	NA	NA	0.25 U	0.25 U
3-Nitrotoluene	MDL	0.40 U	NA	NA	NA	NA	NA	0.40 U	NA	0.40 U	0.40 U	NA	NA	0.40 U	NA	NA	0.40 U	0.40 U
4-Amino-2,6-Dinitrotoluene	7.3	0.30 U	NA	NA	NA	NA	NA	0.30 U	NA	0.30 U	0.30 U	NA	NA	0.30 U	NA	NA	0.30 U	0.30 U
4-Nitrotoluene	4.2	0.60 U	NA	NA	NA	NA	NA	0.60 U	NA	0.60 U	0.60 U	NA	NA	0.60 U	NA	NA	0.60 U	0.60 U
HMX	180	0.65 U	NA	NA	NA	NA	NA	0.65 U	NA	0.65 U	0.65 U	NA	NA	0.75 U	NA	NA	170	1.1 U
Methanamine, N-Methyl-N-Nitroso	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	MDL	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	0.20 U	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	0.20 U
Nitroglycerin	MDL	5.2 U	NA	NA	NA	NA	NA	5.2 U	NA	5.2 U	5.2 U	NA	NA	5.2 U	NA	NA	5.2 U	5.2 U
Pentaerythritol tetranitrate	MDL	6.0 U	NA	NA	NA	NA	NA	6.0 U	NA	6.0 U	6.0 U	NA	NA	6.0 U	NA	NA	6.0 U	6.0 U
RDX	0.61	0.20 U	NA	NA	NA	NA	NA	0.20 U	NA	0.58 U	0.20 U	NA	NA	2.3	NA	NA</td		

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Chrysene	2.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo (A,H) Anthracene	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl Phthalate	2,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl Phthalate	7,300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Butyl Phthalate	370	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-N-Octyl Phthalate	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	MDL	2 U	2 U	2 U	2 U	2 U	5 U	2 U	NA	2 U	2 U	400 U	NA	NA	NA	NA	2 U	2 U
Hexachlorocyclopentadiene	22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	4.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno (1,2,3-Cd) Pyrene	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamine	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tentatively Identified Compounds (µg/L)																		
1,2-Dichloro-1,1,2-Trifluoroethane (TIC)	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5 J	
1,4-Dioxane (TIC)	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cyclic octaatomic sulfur (TIC)	MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Volatile Organic Compounds (µg/L)																		
1,1,1,2-Tetrachloroethane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U
1,1,1-Trichloroethane	200	0.8 J	8	0.8 U	1 J	0.8 U	2 U	1 UJ	NA	2 J	0.8 U	170,000	NA	NA	NA	0.8 U	3 J	
1,1,2,2-Tetrachloroethane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
1,1,2-Trichloroethane	MDL	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	0.8 U	NA	0.8 U	0.8 U	160 U	NA	NA	NA	0.8 U	0.8 U	
1,1-Dichloroethane	2.4	1 J	1 J	1 U	1 J	1 J	3 U	1 U	NA	2 J	1 U	630 J	NA	NA	NA	1 U	12	
1,1-Dichloroethene	7	2 J	3 J	0.8 U	4 J	8	4 J	2 J	NA	4 J	0.8 U	2,600	NA	NA	NA	0.8 U	5	
1,1-Dichloropropene	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
1,2,3-Trichlorobenzene	2.9	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
1,2,3-Trichloropropane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
1,2,4-Trimethylbenzene	1.5	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
1,2-Dibromo-3-Chloropropane (Dbcp)	MDL	2 U	2 U	2 U	2 U	2 U	5 U	2 U	NA	2 U	2 U	400 U	NA	NA	NA	2 U	2 U	
1,2-Dibromoethane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
1,2-Dichloroethane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
1,2-Dichloropropane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
1,3,5-Trimethylbenzene	37	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
1,4-Dioxane	6.1	70 U	70 U	70 U	70 U	70 U	180 U	70 U	NA	70 U	70 U	14,000 U	NA	NA	NA	70 U	70 U	
2,2-Dichloropropane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
2-Butanone	710	3 U	3 U	3 U	3 U	3 U	8 U	3 U	NA	3 U	3 U	600 U	NA	NA	NA	3 U	3 U	
2-Chloroethyl Vinyl Ether	MDL	2 UR	2 UR	2 UR	2 UR	2 UR	5 UR	2 UR	NA	2 UR	2 UR	400 UR	NA	NA	NA	2 UR	2 UR	
2-Chlorotoluene	73	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
2-Hexanone	4.7	3 U	3 U	3 U	3 U	3 U	8 U	3 U	NA	3 U	3 U	600 U	NA	NA	NA	3 U	3 U	
4-Chlorotoluene	260	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	1 U	1 U	
4-Methyl-2-Pentanone	200																	

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Benzene	MDL	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	NA	0.5 U	0.5 U	100 U	NA	NA	NA	NA	0.5 U	0.5 U	
Bromobenzene	8.8	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Bromodichloromethane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Bromoform	8.5	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Bromomethane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Carbon Disulfide	100	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Carbon Tetrachloride	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Chlorobenzene	9.1	1 J	0.8 U	0.8 U	0.8 U	0.8 U	2 U	0.8 U	NA	0.8 U	0.8 U	160 U	NA	NA	NA	NA	0.8 U	0.8 U	
Chlorobromomethane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Chloroethane	2,100	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Chloroform	MDL	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	0.8 U	NA	0.8 U	0.8 U	160 U	NA	NA	NA	NA	0.8 U	0.8 U	
Chloromethane	19	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
cis-1,2-Dichloroethene	37	0.8 U	4 J	0.8 U	290	0.8 U	860	81	NA	5 J	0.8 U	160 U	NA	NA	NA	NA	16	46	
cis-1,3-Dichloropropene	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Cyclohexane	1,300	2 U	2 U	2 U	2 U	2 U	5 U	2 U	NA	2 U	2 U	400 U	NA	NA	NA	NA	2 U	2 U	
Cymene	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Dibromochloromethane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Dibromomethane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Dichlorodifluoromethane	39	2 U	2 U	2 U	2 U	2 U	5 U	2 U	NA	2 U	2 U	400 U	NA	NA	NA	NA	2 U	2 U	
Ethylbenzene	1.5	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	0.8 U	NA	0.8 U	0.8 U	160 U	NA	NA	NA	NA	0.8 U	0.8 U	
Freon 113	5,900	2 J	12	2 U	2 U	2 U	21 J	2 U	NA	2 J	2 U	400 U	NA	NA	NA	NA	2 U	290	
Isopropylbenzene	68	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
m&p-Xylene	20	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	0.8 U	NA	0.8 U	0.8 U	160 U	NA	NA	NA	NA	0.8 U	0.8 U	
Methyl Acetate	3,700	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Methyl Tert-Butyl Ether	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	NA	0.5 U	0.5 U	100 U	NA	NA	NA	NA	0.5 U	0.5 U	
Methylcyclohexane	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Methylene Chloride	4.8	2 U	2 U	2 U	2 U	2 U	5 U	2 U	NA	2 U	2 U	400 U	NA	NA	NA	NA	2 U	2 U	
N-Butylbenzene	8	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
N-Propylbenzene	130	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
O-Xylene	120	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2 U	0.8 U	NA	0.8 U	0.8 U	160 U	NA	NA	NA	NA	0.8 U	0.8 U
Sec-Butylbenzene	8	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Styrene	100	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
tert-Butylbenzene	8	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Tetrachloroethene	MDL	0.8 U	19	6	500	1 J	2,600	340	NA	25	0.8 U	160 U	NA	NA	NA	NA	480	260	
Tetrahydrofuran	9.5	4 U	4 U	4 U	4 U	4 U	10 U	4 U	NA	4 U	4 U	800 U	NA	NA	NA	NA	4 U	4 U	
Toluene	230	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	2 U	0.7 U	NA	0.7 U	0.7 U	150 J	NA	NA	NA	NA	0.7 U	0.7 U	
trans-1,2-Dichloroethene	11	0.8 U	0.8 U	0.8 U	0.8 U	1 J	0.8 U	6 J	0.8 U	NA	0.8 U	0.8 U	160 U	NA	NA	NA	NA	0.8 U	0.8 U
trans-1,3-Dichloropropene	MDL	1 U	1 U	1 U	1 U	1 U	3 U	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	1 U	
Trichloroethene	2	1 U	4 J	1 U	74	6	170	41	NA	9	1 U	200 U	NA	NA	NA	NA	10	49	
Trichlorofluoromethane	130	2 U	2 U	2 U	2 U	2 U	5 U	2 U	NA	2 U	2 U	400 U	NA	NA	NA	NA	2 U	2 U	
Vinyl Chloride	MDL	1 U	1 U	1 U	1 U	14	1 U	62	1 U	NA	1 U	1 U	200 U	NA	NA	NA	NA	1 U	6
<i>Geochemical Parameters</i>																			
Dissolved Oxygen (mg/L)	NA	0.23	0.68	0.16	0.05	0.32	0.35	0.5	0.35	NA	0.14	5.31	5.9	0.84	2.65	0.88	NA	0.08	
Oxidation-Reduction Potential (mV)	NA	216.3	24.5	81.4	219.2	-59.1	59.5	92.8	81.2	NA	-74.2	1.1	-28.5	69.6	90.4	58	NA	6	
pH (std. unts)	NA	6.53	6.45	6.25	6.34	6.56	6.7	6.29	6.64	NA	6.59	6.82	6.98	6.59	6.76	6.72	NA	6.75	
Specific Conductance (μS/cm)	NA	489	343	180	215	337	0.6	309	558	NA	849	211	476						

TABLE E.3
2009 Annual Shallow Groundwater Sampling Analytical Data
Atlantic Research Corporation, Gainesville, Virginia

Location Sample Date QA/QC	Screening Level Criteria ¹	SW 74-07 17-Aug-09	SW PBS-01 13-Aug-09	SW SB-01 12-Aug-09	SW SB-02 12-Aug-09	SW SB-03 18-Aug-09
<i>Inorganics (µg/L)</i>						
Perchlorate	2.6	520	0.20 U	2.0 U	2.0 U	2.0 U
<i>Metals (ng/L)</i>						
Aluminum, Dissolved	3.7	NA	NA	0.0802 U	0.0802 U	0.0802 U
Antimony, Dissolved	MDL	NA	NA	0.0097 U	0.0097 U	0.0097 U
Arsenic, Dissolved	MDL	NA	NA	0.0072 U	0.0072 U	0.0072 U
Barium, Dissolved	0.73	NA	NA	0.0566	0.0155	0.0343
Beryllium, Dissolved	0.004	NA	NA	0.0014 U	0.0014 U	0.0014 U
Boron, Dissolved	0.73	NA	NA	0.117	0.200	0.378
Cadmium, Dissolved	0.0018	NA	NA	0.0020 U	0.0020 U	0.0020 U
Calcium Metal, Dissolved	MDL	NA	NA	114	141	122
Chromium, Dissolved	0.1	NA	NA	0.0513	0.0075 J	0.0050 J
Cobalt, Dissolved	MDL	NA	NA	0.0021 U	0.0023 J	0.0087
Copper, Dissolved	0.15	NA	NA	0.0031 J	0.0041 J	0.0056 J
Iron, Dissolved	2.6	NA	NA	0.0522 U	0.0522 U	0.0643 J
Lead, Dissolved	0.015	NA	NA	0.0069 U	0.0069 U	0.0069 U
Magnesium, Dissolved	40	NA	NA	59.4	99.5	49.2
Manganese, Dissolved	0.088	NA	NA	0.0725	0.0498	0.0549
Mercury, Dissolved	0.000057	NA	NA	0.000056 U	0.000056 U	0.000056 U
Nickel, Dissolved	0.073	NA	NA	0.0060 J	0.0073 J	0.0133
Potassium, Dissolved	MDL	NA	NA	6.14	0.956	5.21
Selenium, Dissolved	0.018	NA	NA	0.0089 U	0.0089 U	0.0089 U
Silver, Dissolved	0.018	NA	NA	0.0023 U	0.0023 U	0.0023 U
Sodium, Dissolved	12	NA	NA	76.7	77.8	74.0
Strontium, Dissolved	2.2	NA	NA	0.272	0.290	0.368
Thallium, Dissolved	MDL	NA	NA	0.0140 U	0.0140 U	0.0140 U
Vanadium, Dissolved	MDL	NA	NA	0.0025 U	0.0129	0.0025 U
Zinc, Dissolved	1.1	NA	NA	0.0081 U	0.0100 J	0.0081 U
<i>Nitroaromatics/amines (µg/L)</i>						
1,2-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1,3,5-Trinitrobenzene	110	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1,3-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1,4-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1-Nitronaphthalene	MDL	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
2,4,6-Trinitrotoluene	2.2	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
2,4-Dinitrotoluene	MDL	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
2,6-Dinitrotoluene	3.7	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
2-Amino-4,6-Dinitrotoluene	7.3	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
2-Nitrotoluene	0.31	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	MDL	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
4-Amino-2,6-Dinitrotoluene	7.3	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
4-Nitrotoluene	4.2	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
HMX	180	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U
Methanamine, N-Methyl-N-Nitroso	MDL	NA	NA	2 U	2 U	2 U
Nitrobenzene	MDL	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nitroglycerin	MDL	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Pentaerythritol tetranitrate	MDL	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
RDX	0.61	2.6	0.51 U	0.20 U	0.54 U	0.20 U
Tetryl	15	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U

TABLE E.3
2009 Annual Shallow Groundwater Sampling Analytical Data
Atlantic Research Corporation, Gainesville, Virginia

Location Sample Date QA/QC	Screening Level Criteria ¹	SW 74-07 17-Aug-09	SW PBS-01 13-Aug-09	SW SB-01 12-Aug-09	SW SB-02 12-Aug-09	SW SB-03 18-Aug-09
PCBs (µg/L)						
Aroclor 1016	0.96	NA	NA	0.11 U	0.11 U	0.099 U
Aroclor 1221	MDL	NA	NA	0.11 U	0.11 U	0.099 U
Aroclor 1232	MDL	NA	NA	0.11 U	0.11 U	0.099 U
Aroclor 1242	MDL	NA	NA	0.11 U	0.11 U	0.099 U
Aroclor 1248	MDL	NA	NA	0.11 U	0.11 U	0.099 U
Aroclor 1254	MDL	NA	NA	0.11 U	0.11 U	0.099 U
Aroclor 1260	MDL	NA	NA	0.11 U	0.11 U	0.099 U
Semi-Volatile Organic Compounds (µg/L)						
1,1-Biphenyl	180	NA	NA	1 U	1 U	1 U
1,2,4,5-Tetrachlorobenzene	MDL	NA	NA	2 U	2 U	2 U
1,2,4-Trichlorobenzene	2.3	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	37	1 U	1 U	1 U	1 U	1 U
1,2-Diphenylhydrazine	MDL	NA	NA	1 U	1 U	1 U
1,3-Dichlorobenzene	MDL	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	MDL	1 U	1 U	1 U	1 U	1 U
2,3,4,6-Tetrachlorophenol	MDL	NA	NA	2 U	2 U	2 U
2,4,5-Trichlorophenol	370	NA	NA	1 U	1 U	1 U
2,4,6-Trichlorophenol	6.1	NA	NA	1 U	1 U	1 U
2,4-Dichlorophenol	11	NA	NA	1 U	1 U	1 U
2,4-Dimethylphenol	73	NA	NA	3 U	3 U	3 U
2,4-Dinitrophenol	MDL	NA	NA	21 U	21 U	22 U
2-Chloronaphthalene	290	NA	NA	2 U	2 U	2 U
2-Chlorophenol	18	NA	NA	1 U	1 U	1 U
2-Methylnaphthalene	15	NA	NA	1 U	1 U	1 U
2-Methylphenol	180	NA	NA	1 U	1 U	1 U
2-Nitroaniline	37	NA	NA	1 U	1 U	1 U
2-Nitrophenol	2	NA	NA	1 U	1 U	1 U
3,3'-Dichlorobenzidine	MDL	NA	NA	2 U	2 U	2 U
3-Nitroaniline	37	NA	NA	1 U	1 U	1 U
4,6-Dinitro-2-Methylphenol	MDL	NA	NA	5 U	5 U	6 U
4-Bromophenyl Phenyl Ether	MDL	NA	NA	1 U	1 U	1 U
4-Chloro-3-Methylphenol	370	NA	NA	1 U	1 U	1 U
4-Chloroaniline	MDL	NA	NA	1 U	1 U	1 U
4-Chlorophenyl Phenyl Ether	MDL	NA	NA	2 U	2 U	2 U
4-Methylphenol	18	NA	NA	2 U	2 U	2 U
4-Nitroaniline	3.4	NA	NA	1 U	1 U	1 U
4-Nitrophenol	MDL	NA	NA	10 U	11 U	11 U
Acenaphthene	220	NA	NA	1 U	1 U	1 U
Acenaphthylene	5.2	NA	NA	1 U	1 U	1 U
Acetophenone	370	NA	NA	2 U	2 U	2 U
Anthracene	1,100	NA	NA	1 U	1 U	1 U
Atrazine	MDL	NA	NA	2 U	2 U	2 U
Benzaldehyde	370	NA	NA	1 U	1 U	1 U
Benzidine	MDL	NA	NA	21 U	21 U	22 U
Benzo (A) Anthracene	MDL	NA	NA	1 U	1 U	1 U
Benzo (A) Pyrene	MDL	NA	NA	1 U	1 U	1 U
Benzo (B) Fluoranthene	MDL	NA	NA	1 U	1 U	1 U
Benzo (G,H,I) Perylene	MDL	NA	NA	1 U	1 U	1 U
Benzo (K) Fluoranthene	MDL	NA	NA	1 U	1 U	1 U
Benzyl Butyl Phthalate	35	NA	NA	2 U	2 U	2 U
Bis(2-Chloroethoxy) Methane	11	NA	NA	1 U	1 U	1 U
Bis(2-Chloroethyl) Ether	MDL	NA	NA	1 U	1 U	1 U
Bis(2-Chloroisopropyl) Ether	MDL	NA	NA	1 U	1 U	1 U
Bis(2-Ethylhexyl) Phthalate	4.8	NA	NA	2 U	2 U	2 U
Caprolactam	1,800	NA	NA	5 U	5 U	6 U
Carbazole	MDL	NA	NA	1 U	1 U	1 U

TABLE E.3
2009 Annual Shallow Groundwater Sampling Analytical Data
Atlantic Research Corporation, Gainesville, Virginia

Location Sample Date QA/QC	Screening Level Criteria ¹	SW 74-07 17-Aug-09	SW PBS-01 13-Aug-09	SW SB-01 12-Aug-09	SW SB-02 12-Aug-09	SW SB-03 18-Aug-09
Chrysene	2.9	NA	NA	1 U	1 U	1 U
Dibenzo (A,H) Anthracene	MDL	NA	NA	1 U	1 U	1 U
Dibenzofuran	3.7	NA	NA	1 U	1 U	1 U
Diethyl Phthalate	2,900	NA	NA	2 U	2 U	2 U
Dimethyl Phthalate	7,300	NA	NA	2 U	2 U	2 U
Di-N-Butyl Phthalate	370	NA	NA	2 U	2 U	2 U
Di-N-Octyl Phthalate	13	NA	NA	2 U	2 U	2 U
Fluoranthene	150	NA	NA	1 U	1 U	1 U
Fluorene	150	NA	NA	1 U	1 U	1 U
Hexachlorobenzene	MDL	NA	NA	1 U	1 U	1 U
Hexachlorobutadiene	MDL	2 U	2 U	1 U	1 U	1 U
Hexachlorocyclopentadiene	22	NA	NA	5 U	5 U	6 U
Hexachloroethane	4.8	NA	NA	1 U	1 U	1 U
Indeno (1,2,3-Cd) Pyrene	MDL	NA	NA	1 U	1 U	1 U
Isophorone	71	NA	NA	1 U	1 U	1 U
Naphthalene	MDL	NA	NA	1 U	1 U	1 U
N-Nitroso-Di-N-Propylamine	MDL	NA	NA	1 U	1 U	1 U
N-Nitrosodiphenylamine	14	NA	NA	2 U	2 U	2 U
Pentachlorophenol	MDL	NA	NA	3 U	3 U	3 U
Phenanthrene	MDL	NA	NA	1 U	1 U	1 U
Phenol	1100	NA	NA	1 U	1 U	1 U
Pyrene	110	NA	NA	1 U	1 U	1 U
Tentatively Identified Compounds (µg/L)						
1,2-Dichloro-1,1,2-Trifluoroethane (TIC)	MDL	NA	NA	NA	NA	NA
1,4-Dioxane (TIC)	MDL	NA	NA	NA	NA	NA
Cyclic octaatomic sulfur (TIC)	MDL	NA	NA	NA	NA	77 J
Volatile Organic Compounds (µg/L)						
1,1,1,2-Tetrachloroethane	MDL	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1,1,2,2-Tetrachloroethane	MDL	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	MDL	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
1,1-Dichloroethane	2.4	1 U	1 U	1 U	1 U	1 J
1,1-Dichloroethene	7	0.8 U	0.8 U	0.8 U	0.8 U	2 J
1,1-Dichloropropene	MDL	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	2.9	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	MDL	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	1.5	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane (Dbcp)	MDL	2 U	2 U	2 U	2 U	2 U
1,2-Dibromoethane	MDL	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	MDL	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	MDL	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	37	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	6.1	70 U	70 U	70 U	70 U	70 U
2,2-Dichloropropane	MDL	1 U	1 U	1 U	1 U	1 U
2-Butanone	710	3 U	3 U	3 U	3 U	3 U
2-Chloroethyl Vinyl Ether	MDL	2 UR	2 UR	2 UR	2 UR	2 UR
2-Chlorotoluene	73	1 U	1 U	1 U	1 U	1 U
2-Hexanone	4.7	3 U	3 U	3 U	3 U	3 U
4-Chlorotoluene	260	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	200	3 U	3 U	3 U	3 U	3 U
Acetone	2,200	6 U	6 U	6 U	6 U	6 U
Acrolein	MDL	40 U	40 U	40 U	40 U	40 U
Acrylonitrile	MDL	4 U	4 U	4 U	4 U	4 U

TABLE E.3
2009 Annual Shallow Groundwater Sampling Analytical Data
Atlantic Research Corporation, Gainesville, Virginia

Location Sample Date QA/QC	Screening Level Criteria ¹	SW 74-07 17-Aug-09	SW PBS-01 13-Aug-09	SW SB-01 12-Aug-09	SW SB-02 12-Aug-09	SW SB-03 18-Aug-09
Benzene	MDL	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	8.8	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	MDL	1 U	1 U	1 U	1 U	1 U
Bromoform	8.5	1 U	1 U	1 U	1 U	1 U
Bromomethane	MDL	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	100	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	MDL	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	9.1	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Chlorobromomethane	MDL	1 U	1 U	1 U	1 U	1 U
Chloroethane	2,100	1 U	1 U	1 U	1 U	1 U
Chloroform	MDL	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Chloromethane	19	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	37	150	0.8 U	0.8 U	0.8 U	0.8 U
cis-1,3-Dichloropropene	MDL	1 U	1 U	1 U	1 U	1 U
Cyclohexane	1,300	2 U	2 U	2 U	2 U	2 U
Cymene	MDL	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	MDL	1 U	1 U	1 U	1 U	1 U
Dibromomethane	MDL	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	39	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	1.5	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Freon 113	5,900	2 U	2 U	2 U	2 U	2 U
Isopropylbenzene	68	1 U	1 U	1 U	1 U	1 U
m&p-Xylene	20	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Methyl Acetate	3,700	1 U	1 U	1 U	1 U	1 U
Methyl Tert-Butyl Ether	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	MDL	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	4.8	2 U	2 U	2 U	2 U	2 U
N-Butylbenzene	8	1 U	1 U	1 U	1 U	1 U
N-Propylbenzene	130	1 U	1 U	1 U	1 U	1 U
O-Xylene	120	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Sec-Butylbenzene	8	1 U	1 U	1 U	1 U	1 U
Styrene	100	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	8	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	MDL	710	0.8 U	0.8 U	0.8 U	0.9 J
Tetrahydrofuran	9.5	4 U	4 U	4 U	4 U	4 U
Toluene	230	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
trans-1,2-Dichloroethene	11	1 J	0.8 U	0.8 U	0.8 U	0.8 U
trans-1,3-Dichloropropene	MDL	1 U	1 U	1 U	1 U	1 U
Trichloroethene	2	75	1 U	1 U	1 U	1 U
Trichlorofluoromethane	130	2 U	2 U	2 U	2 U	2 U
Vinyl Chloride	MDL	4 J	1 U	1 U	1 U	1 U
Geochemical Parameters						
Dissolved Oxygen (mg/L)	NA	0.11	0.58	3.51	3.37	5.6
Oxidation-Reduction Potential (mV)	NA	12.9	22.1	8.2	107.3	208.6
pH (std. unts)	NA	6.3	7.77	6.87	6.59	7.29
Specific Conductance (μ S/cm)	NA	0.38	509	1,225	1,658	1.16
Temperature (°C)	NA	20.25	24.88	23.16	21.84	28.05
Turbidity (NTU)	NA	3.97	20.7	6.43	4.68	27.8

Notes:

¹ Screening level criteria were provided in Table 3-2b of the Final Supplemental RCRA Facility Investigation Report (Geosyntec, 2009), and some have been changed to reflect the most recent risk-based concentration (RBC) screening levels from the Human Health Risk-Based Concentration Table, Mid-Atlantic Risk Assessment, U.S. EPA Region III. (www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). December 2009; retrieved January 18, 2010). The RBC was multiplied by 0.1 for non-carcinogens.

bold - concentration above screening level

Acronyms:

°C - degrees celcius
 Dup - duplicate sample
 J - estimated value
 mg/L - milligrams per liter
 mV - millivolts
 NA - not analyzed
 NTU - Nephelometric Turbidity Units
 QA/QC - quality assurance/quality control
 std. units - standard units
 U - Non Detect
 μ S/cm - microsiemens per centimeter
 μ g/L - micrograms per liter

TABLE E.4
2009 ANNUAL SURFACE WATER SAMPLING ANALYTICAL DATA
Atlantic Research Corporation, Gainesville, Virginia

Geosyntec Consultants

Location Sample Date QA/QC	Screening Level Criteria ¹	STR 04 8/19/2009	STR 06 8/19/2009	STR 40-15 8/19/2009	STR 07 8/19/2009
<u>Inorganics (µg/L)</u>					
Perchlorate	600	60	5.6	7.3	0.20 U
<u>Nitroaromatics/amines (µg/L)</u>					
1,2-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	NA
1,3,5-Trinitrobenzene	110	0.20 U	0.20 U	0.20 U	NA
1,3-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	NA
1,4-Dinitrobenzene	0.37	0.20 U	0.20 U	0.20 U	NA
1-Nitronaphthalene	MDL	0.20 U	0.20 U	0.20 U	NA
2,4,6-Trinitrotoluene	100	0.20 U	0.20 U	0.20 U	NA
2,4-Dinitrotoluene	MDL	0.20 U	0.20 U	0.20 U	NA
2,6-Dinitrotoluene	81	0.45 U	0.45 U	0.45 U	NA
2-Amino-4,6-Dinitrotoluene	1,480	0.20 U	0.20 U	0.20 U	NA
2-Nitrotoluene	0.31	0.25 U	0.25 U	0.25 U	NA
3-Nitrotoluene	750	0.40 U	0.40 U	0.40 U	NA
4-Amino-2,6-Dinitrotoluene	7.3	0.30 U	0.30 U	0.30 U	NA
4-Nitrotoluene	1,900	0.60 U	0.60 U	0.60 U	NA
HMX	150	0.65 U	0.65 U	0.65 U	NA
Nitrobenzene	17	0.20 U	0.20 U	0.20 U	NA
Nitroglycerin	138	5.2 U	5.2 U	5.2 U	NA
Pentaerythritol tetranitrate	85,000	6.0 U	6.0 U	6.0 U	NA
RDX	360	0.20 U	0.20 U	0.20 U	NA
Tetryl	15	0.30 U	0.30 U	0.30 U	NA
<u>Volatile Organic Compounds (µg/L)</u>					
1,2,4-Trichlorobenzene	24	1 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	MDL	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	11	2 J	0.8 U	0.8 U	0.8 U
1,1,2,2-Tetrachloroethane	610	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	MDL	0.8 U	0.8 U	0.8 U	0.8 U
1,1-Dichloroethane	47	3 J	1 U	1 U	1 U
1,1-Dichloroethene	25	2 J	0.8 U	0.8 J	0.8 U
1,1-Dichloropropene	MDL	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	8	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	MDL	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	33	1 U	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane (Dbcp)	MDL	2 U	2 U	2 U	2 U
1,2-Dibromoethane	MDL	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	MDL	1 U	1 U	1 U	1 U
1,2-Dichloroethane	MDL	1 U	1 U	1 U	1 U
1,2-Dichloropropene	MDL	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	71	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	150	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	26	1 U	1 U	1 U	1 U
1,4-Dioxane	6.1	70 U	70 U	70 U	70 U
2,2-Dichloropropene	MDL	1 U	1 U	1 U	1 U
2-Butanone	14,000	3 U	3 U	3 U	3 U
2-Chloroethyl Vinyl Ether	MDL	2 UR	2 UR	2 UR	2 UR
2-Chlorotoluene	73	1 U	1 U	1 U	1 U
2-Hexanone	99	3 U	3 U	3 U	3 U
4-Chlorotoluene	260	1 U	1 U	1 U	1 U

TABLE E.4
2009 ANNUAL SURFACE WATER SAMPLING ANALYTICAL DATA
Atlantic Research Corporation, Gainesville, Virginia

Geosyntec Consultants

Location Sample Date QA/QC	Screening Level Criteria ¹	STR 04 8/19/2009	STR 06 8/19/2009	STR 40-15 8/19/2009	STR A 07 8/19/2009
4-Methyl-2-Pentanone	170	3 U	3 U	3 U	3 U
Acetone	1,500	6 U	6 U	6 U	6 U
Acrolein	190	40 U	40 U	40 U	40 U
Acrylonitrile	MDL	4 U	4 U	4 U	4 U
Benzene	2.2	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	2	1 U	1 U	1 U	1 U
Bromodichloromethane	MDL	1 U	1 U	1 U	1 U
Bromoform	4.3	1 U	1 U	1 U	1 U
Bromomethane	MDL	1 U	1 U	1 U	1 U
Carbon Disulfide	MDL	1 U	1 U	1 U	1 U
Carbon Tetrachloride	MDL	1 U	1 U	1 U	1 U
Chlorobenzene	1.3	0.8 U	0.8 U	0.8 U	0.8 U
Chlorobromomethane	MDL	1 U	1 U	1 U	1 U
Chloroethane	2,100	1 U	1 U	1 U	1 U
Chloroform	1.8	0.8 U	0.8 U	0.8 U	0.8 U
Chloromethane	1.8	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	37	2 J	0.8 U	230	0.8 U
cis-1,3-Dichloropropene	MDL	1 U	1 U	1 U	1 U
Cyclohexane	1,300	2 U	2 U	2 U	2 U
Cymene	85	1 U	1 U	1 U	1 U
Dibromochloromethane	MDL	1 U	1 U	1 U	1 U
Dibromomethane	37	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	39	2 U	2 U	2 U	2 U
Ethylbenzene	90	0.8 U	0.8 U	0.8 U	0.8 U
Freon 113	5,900	3 J	2 U	4 J	2 U
Hexachlorobutadiene	MDL	2 U	2 U	2 U	2 U
Isopropylbenzene	2.6	1 U	1 U	1 U	1 U
m&p-Xylene	13	0.8 U	0.8 U	0.8 U	0.8 U
Methyl Acetate	3,700	1 U	1 U	1 U	1 U
Methyl Tert-Butyl Ether	11,070	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	MDL	1 U	1 U	1 U	1 U
Methylene Chloride	4.6	2 U	2 U	2 U	2 U
N-Butylbenzene	80	1 U	1 U	1 U	1 U
N-Propylbenzene	128	1 U	1 U	1 U	1 U
O-Xylene	140	0.8 U	0.8 U	0.8 U	0.8 U
Sec-Butylbenzene	80	1 U	1 U	1 U	1 U
Styrene	72	1 U	1 U	1 U	1 U
tert-Butylbenzene	80	1 U	1 U	1 U	1 U
Tetrachloroethene	MDL	3 J	0.8 U	140	0.8 U
Tetrahydrofuran	9.5	4 U	4 U	4 U	4 U
Toluene	2	0.7 U	0.7 U	0.7 U	0.7 U
trans-1,2-Dichloroethene	140	0.8 U	0.8 U	2 J	0.8 U
trans-1,3-Dichloropropene	MDL	1 U	1 U	1 U	1 U
Trichloroethene	2.5	3 J	1 U	34	1 U
Trichlorofluoromethane	130	2 U	2 U	2 U	2 U
Vinyl Chloride	MDL	1 U	1 U	8	1 U

TABLE E.4
2009 ANNUAL SURFACE WATER SAMPLING ANALYTICAL DATA
Atlantic Research Corporation, Gainesville, Virginia

Geosyntec Consultants

Location Sample Date QA/QC	Screening Level Criteria ¹	STR 04 8/19/2009	STR 06 8/19/2009	STR 40-15 8/19/2009	STR 07 8/19/2009
<i>Geochemical Parameters</i>					
Dissolved Oxygen (mg/L)	NA	5.78	9.06	3.57	6.39
Oxidation-Reduction Potential (mV)	NA	55.5	64.6	84.9	48.5
pH (std. units)	NA	6.93	8.68	7.71	7.85
Specific Conductance ($\mu\text{S}/\text{cm}$)	NA	0.65	0.49	0.71	0.85
Temperature (°C)	NA	22.73	26.08	25.69	26.61
Turbidity (NTU)	NA	8.79	4.31	7.95	3.19

Notes

¹ Screening level criteria provided in Table 3-2c of the Sumpplemental RCRA Facility Investigation Report (Geosyntec, 2009b).

Acronyms:

Dup - duplicate sample

$\mu\text{g}/\text{L}$ - micrograms per liter

J - estimated value

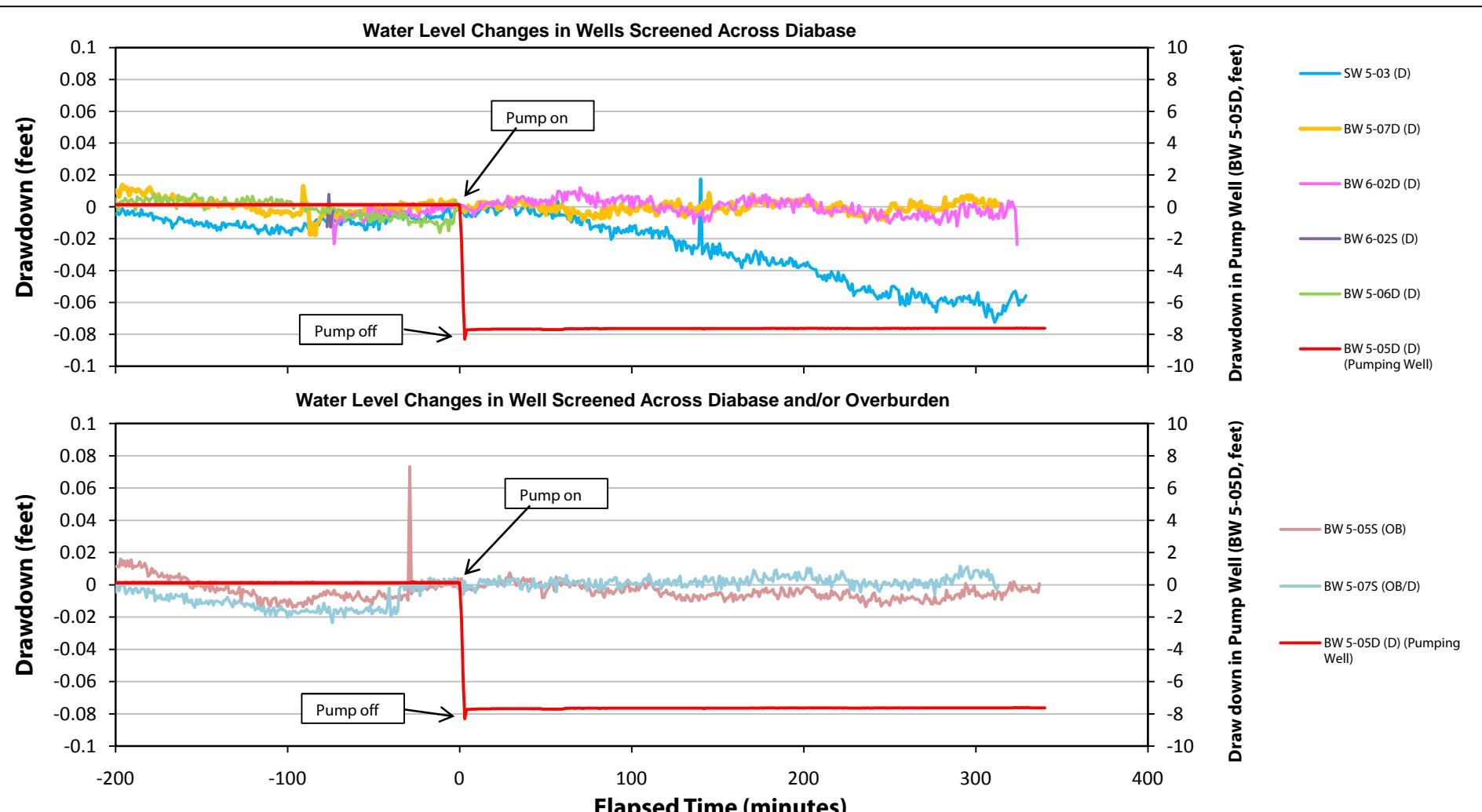
mg/L - milligrams per liter

NA - not analyzed

QA/QC - quality assurance/quality control

U - Non Detect

FIGURES



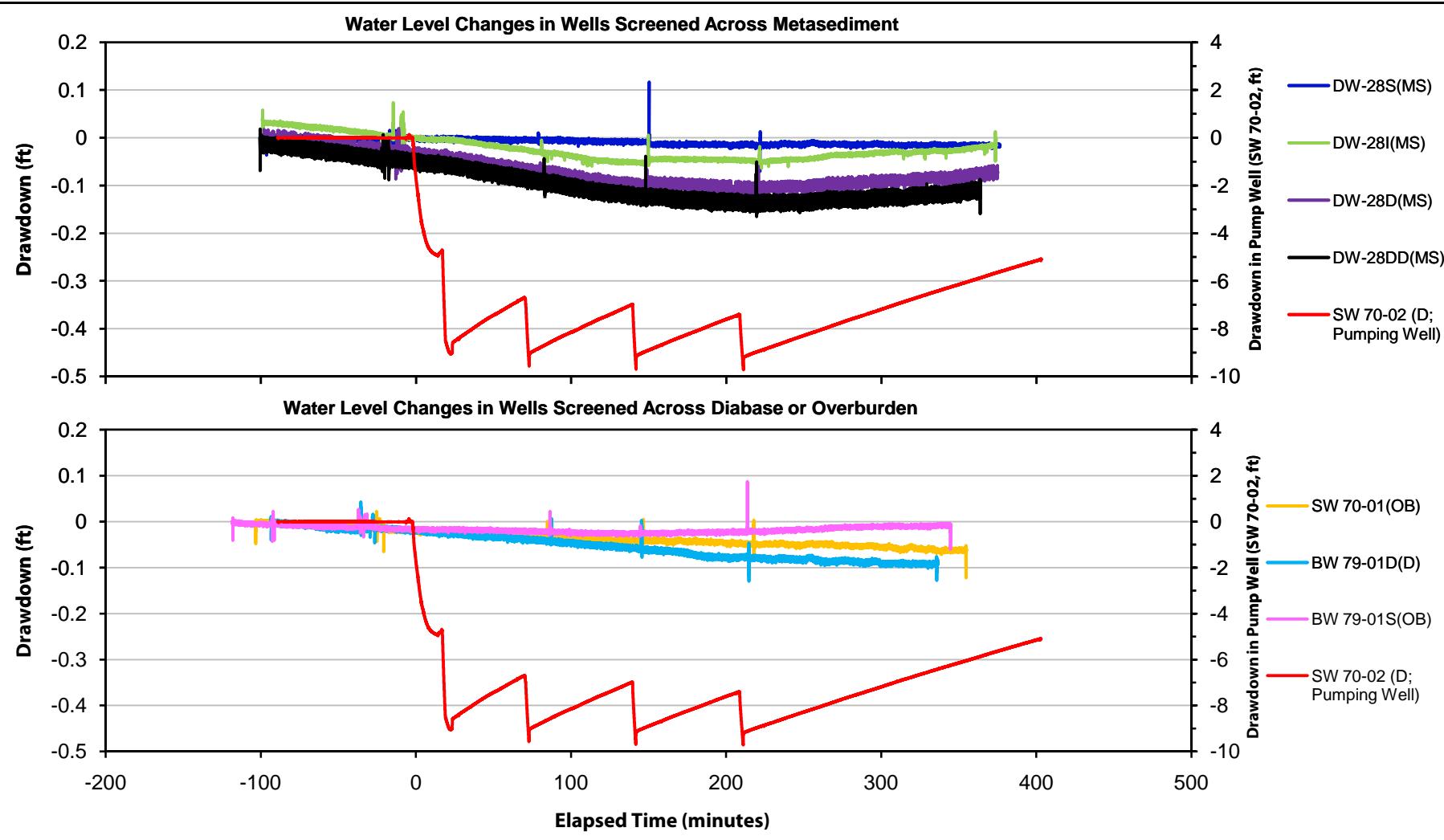
Pressure Response during BW 5-05D Pumping Test
Atlantic Research Corporation, Gainesville, Virginia

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**Figure
E.1**

**Notes**

Test conducted on 7 August 2009.

SW 70-02 was purged dry at a pumping rate of 0.5 gpm. Extraction was cycled on and off over the 4-hour test to allow for recovery in the pumping well.

D - diabase

MS - metasediment

OB - overburden

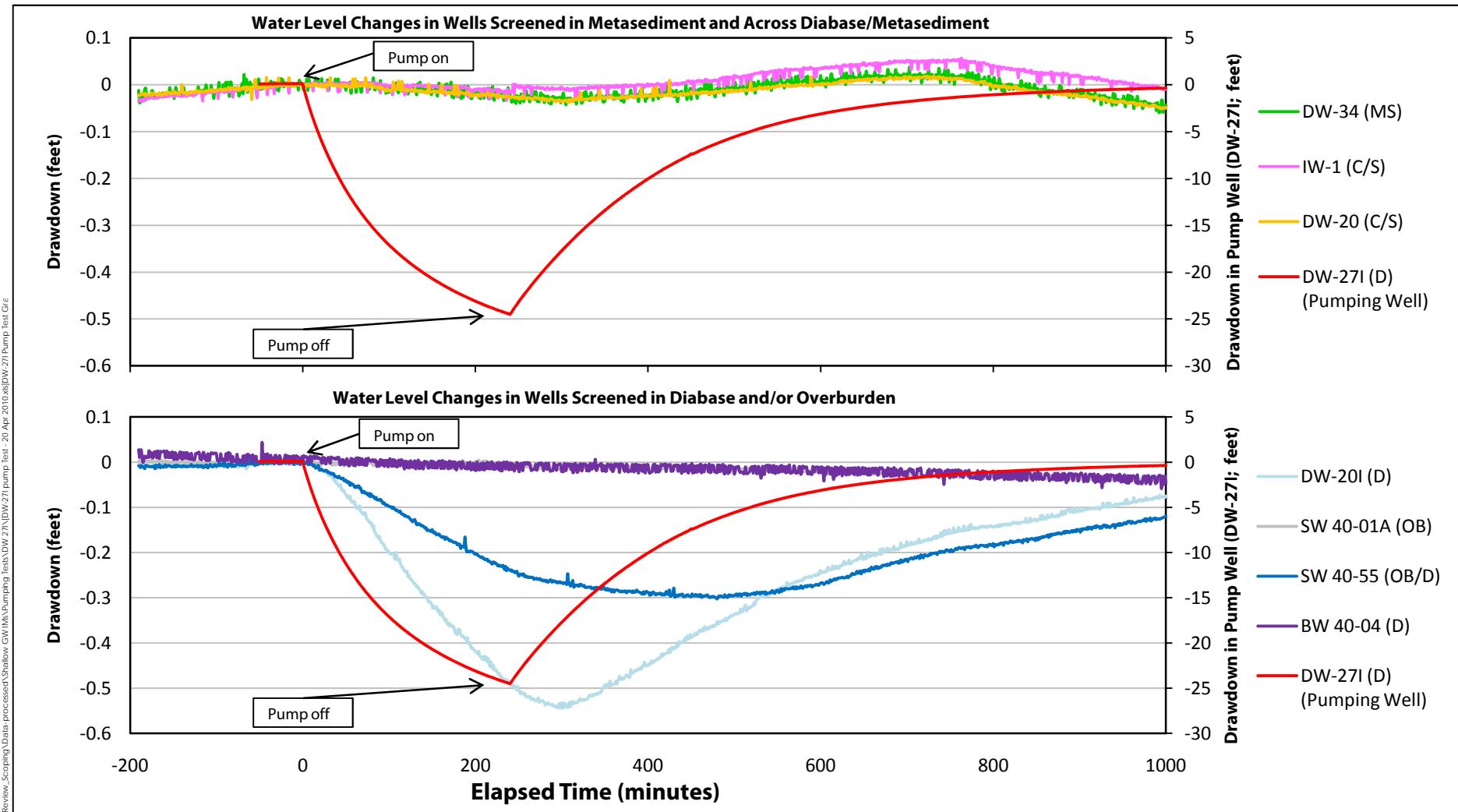
Pressure Response during SW 70-02 Pumping Test
Atlantic Research Corporation, Gainesville, Virginia

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Figure
E.2



Notes

Test conducted on 11 August 2009.

Extraction rate at DW-27I was 2.5 gpm.

C/S - Cross screened across diabase/metasedimentary contact

D - Diabase

MS - Metasediment

OB - Overburden

Pressure Response during DW-27I Pumping Test

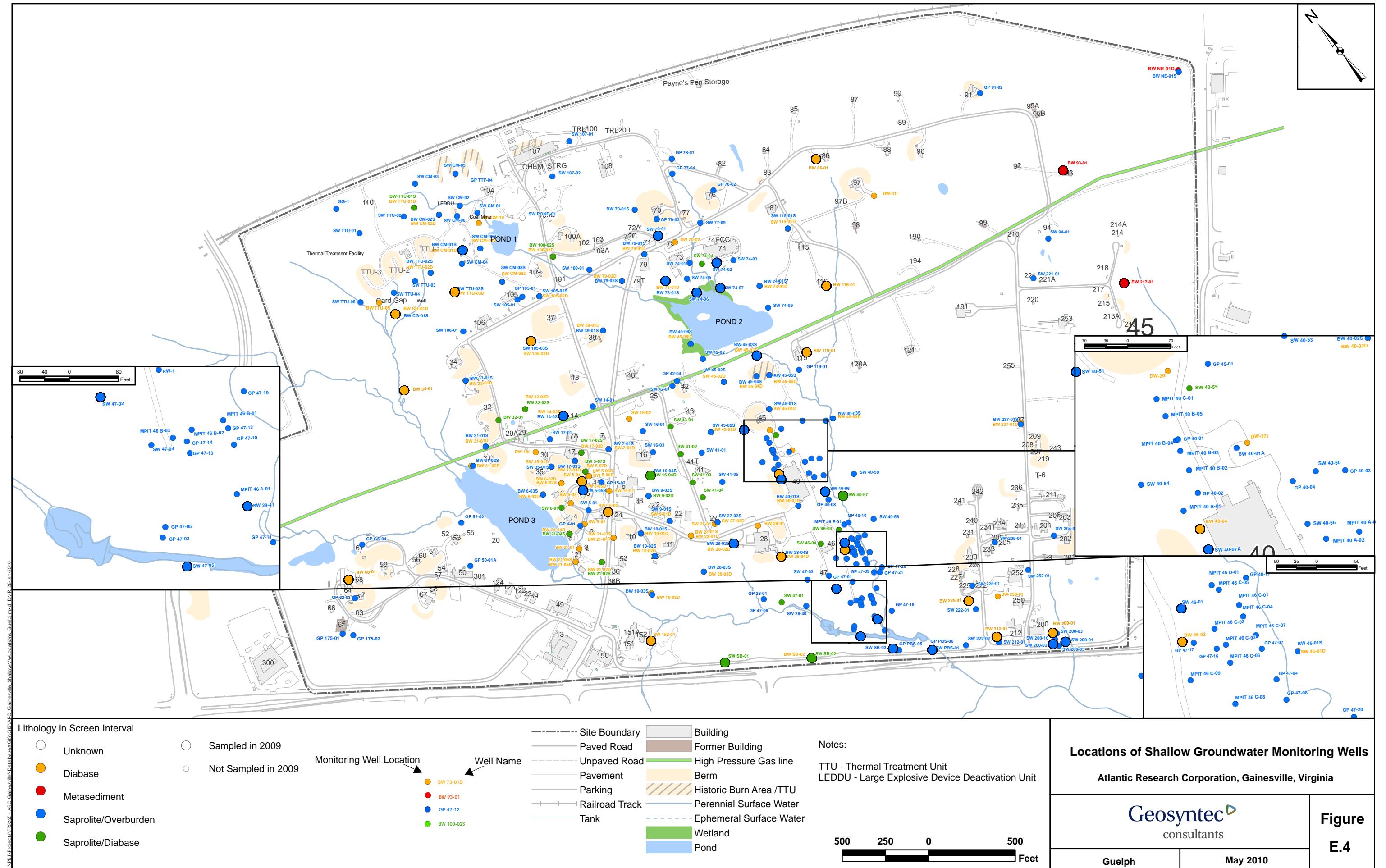
Atlantic Research Corporation, Gainesville, Virginia

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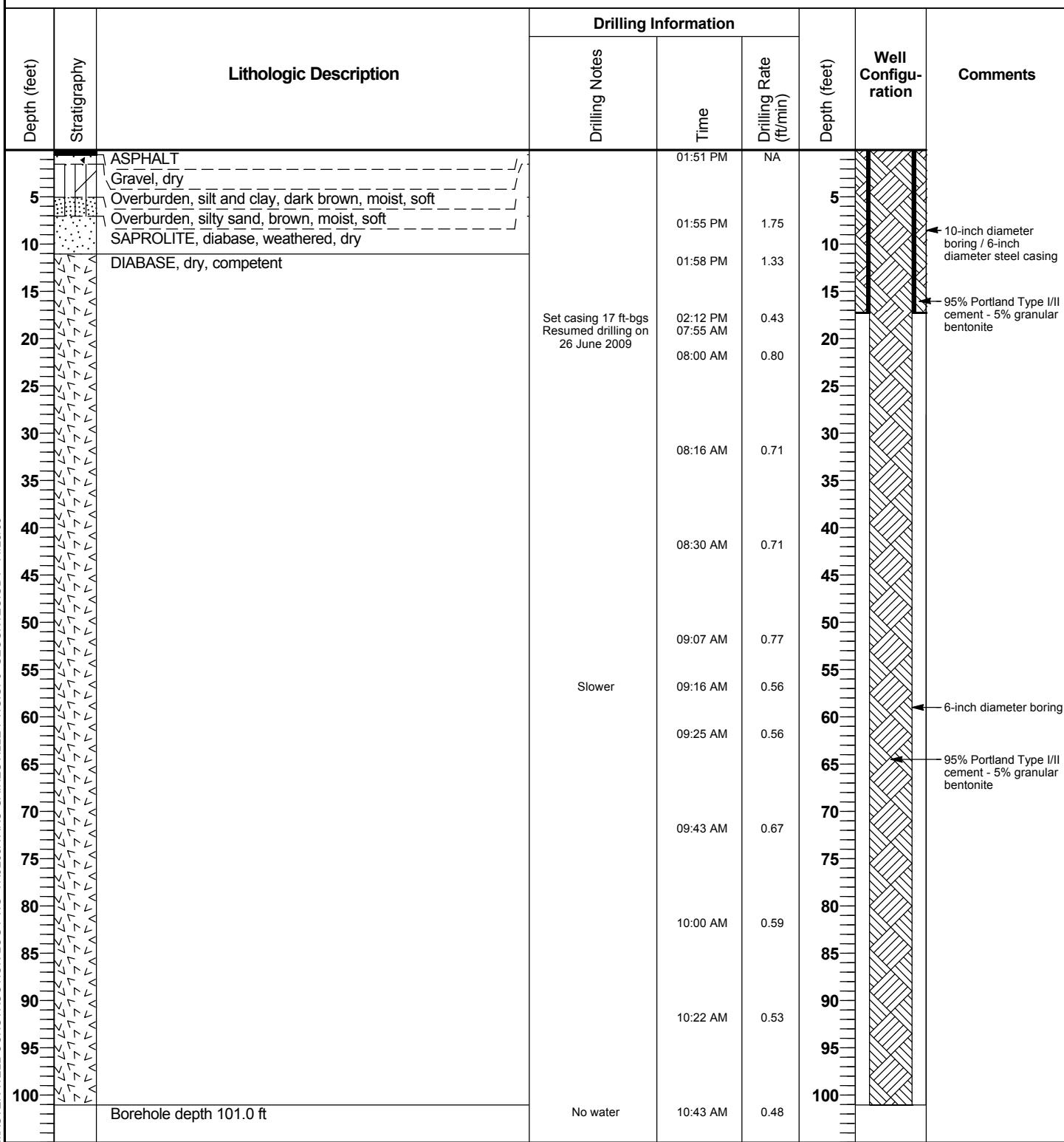
Figure
E.3



ATTACHMENT E.1

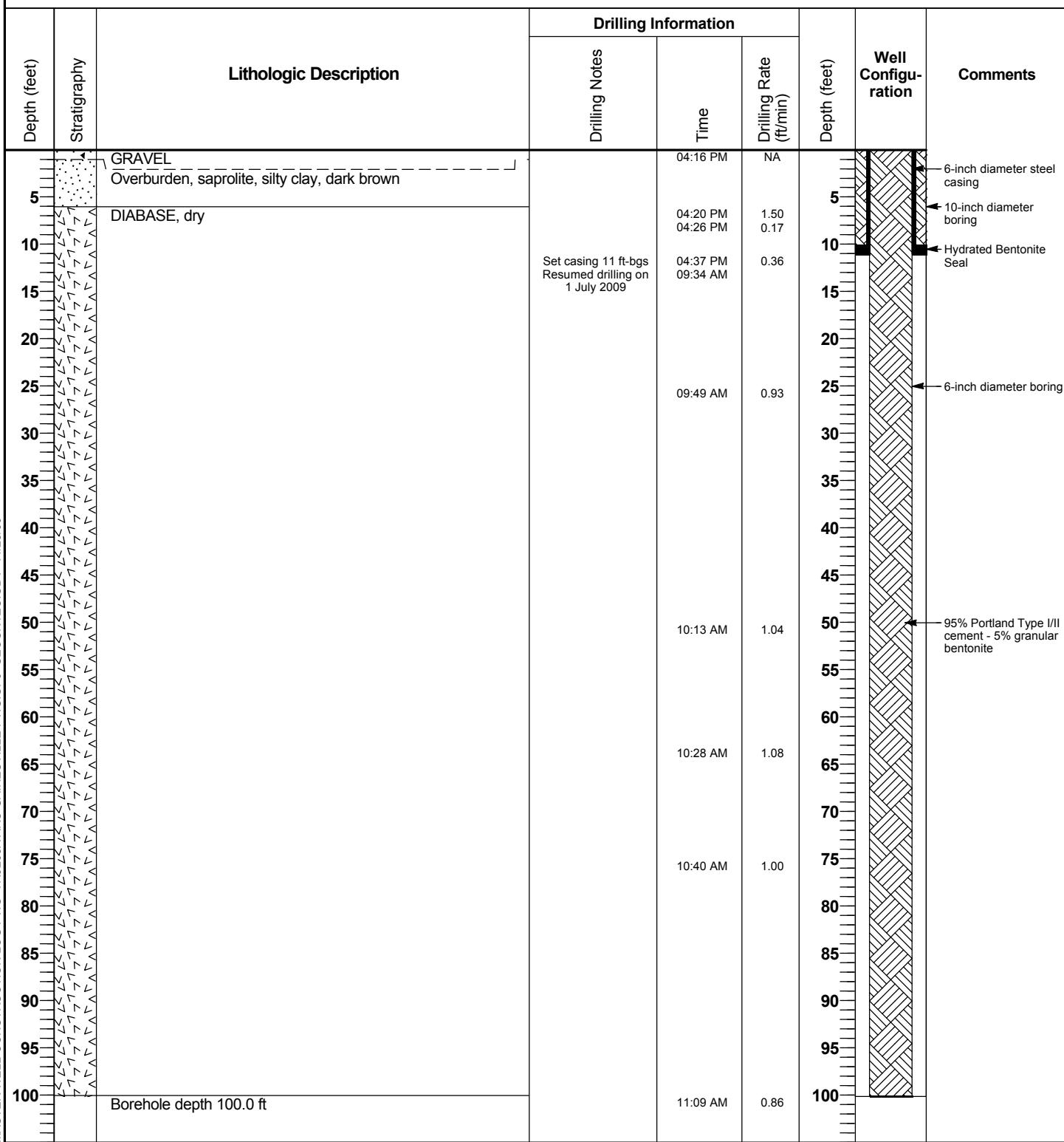
Shallow Groundwater Borehole Logs

Project No.:	TR0265A	Location:	Gainesville, Virginia
Client:	ARC Gainesville	Coordinates:	N 6,970,947 E 11,744,323
Logged By:	A. Gray	Borehole Diameter:	10-inch / 6-inch
Reviewed By:	E. Jensen	Site Datum:	NAD1983 StatePlane Virginia N FIPS 4501 ft
Driller:	Eichelbergers, Inc. (C. Kurtz)	Ground Surface Elevation:	290 ft amsl
Drilling Method:	Air Rotary	Top Casing Elevation:	Not Applicable
Well Material:	Not Applicable (abandoned)	Start Date - End Date:	25 June 2009 - 26 June 2009

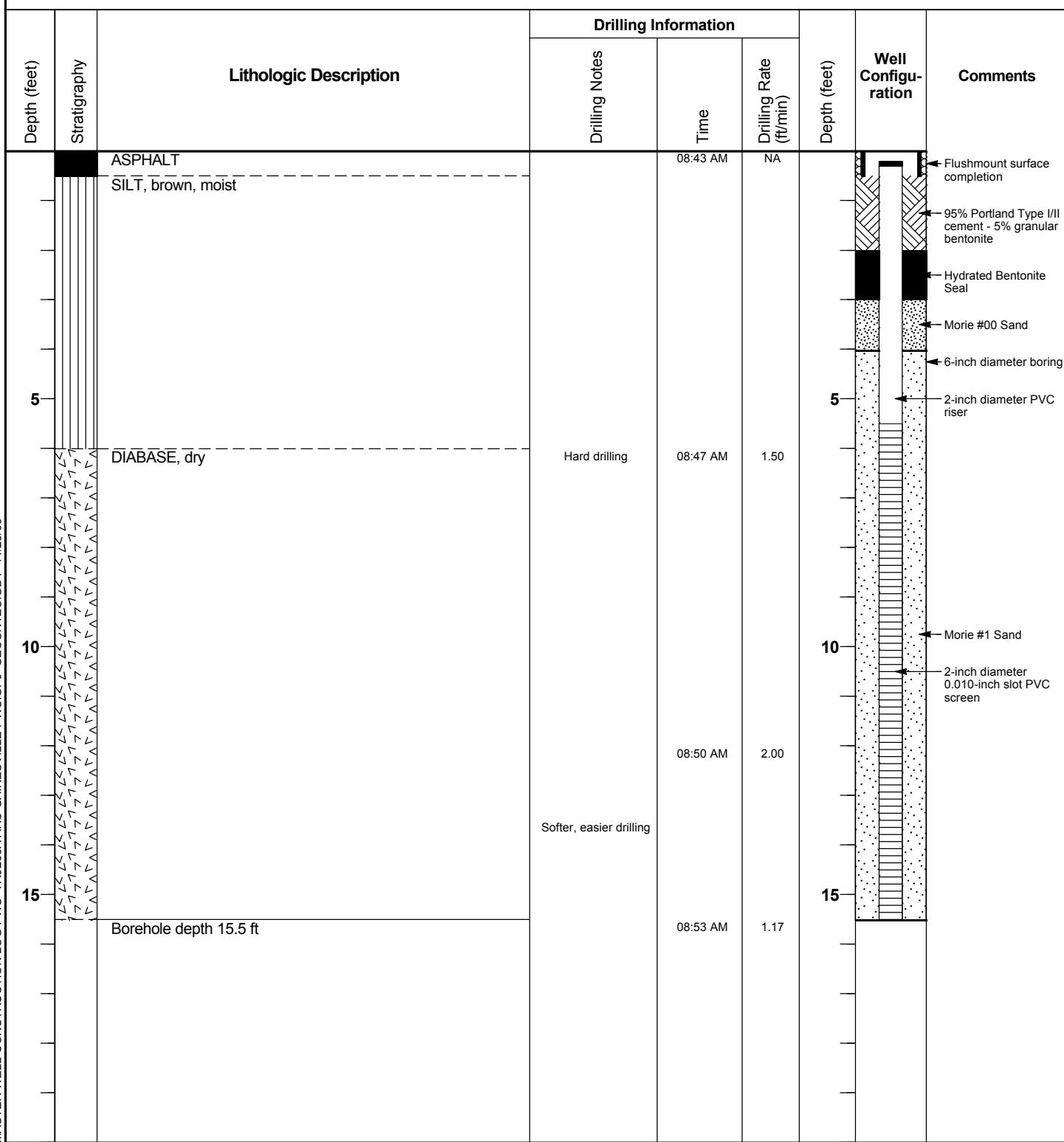


Project No.:	TR0265A	Location:	Gainesville, Virginia	
Client:	ARC Gainesville	Coordinates:	N 6,970,661 E 11,744,725	
Logged By:	E. Jensen	Borehole Diameter:	10-inch / 6-inch	
Reviewed By:	E. Jensen	Site Datum:	NAD1983 StatePlane Virginia N FIPS 4501 ft	
Driller:	Eichelbergers, Inc. (C. Kurtz)	Ground Surface Elevation:	281 ft amsl	
Drilling Method:	Air Rotary	Top Casing Elevation:	280 ft amsl	
Well Material:	Open Borehole	Start Date - End Date:	29 June 2009 - 30 June 2009	
Depth (feet)	Stratigraphy	Drilling Information		
		Drilling Notes	Time	Drilling Rate (ft/min)
Lithologic Description		Depth (feet)	Well Configuration	Comments
5	ASPHALT GRAVEL FILL, road bed SILTY CLAY (CL), some sand, dark brown to orange / brown, (overburden)	01:11 PM 01:13 PM 01:16 PM	NA 0.25 0.33	Flushmount surface completion 95% Portland Type I/II cement - 5% granular bentonite 6-inch diameter steel casing
10	SAPROLITE, weathered gray diabase (1-inch x 1/2-inch x 1/2-inch), wet at interface DIABASE, gray, competent	01:20 PM 01:25 PM	2.37 0.40	10-inch diameter boring
15		08:10 AM 08:12 AM	1.50	Hydrated Bentonite Seal
20		08:24 AM	0.60	6-inch diameter boring
25				Open borehole
30	Borehole depth 100.0 ft	11:55 AM	1.00	
35		12:18 PM	0.83	
40				
45				
50				
55				
60				
65				
70				
75				
80				
85				
90				
95				
100		01:01 PM	1.04	

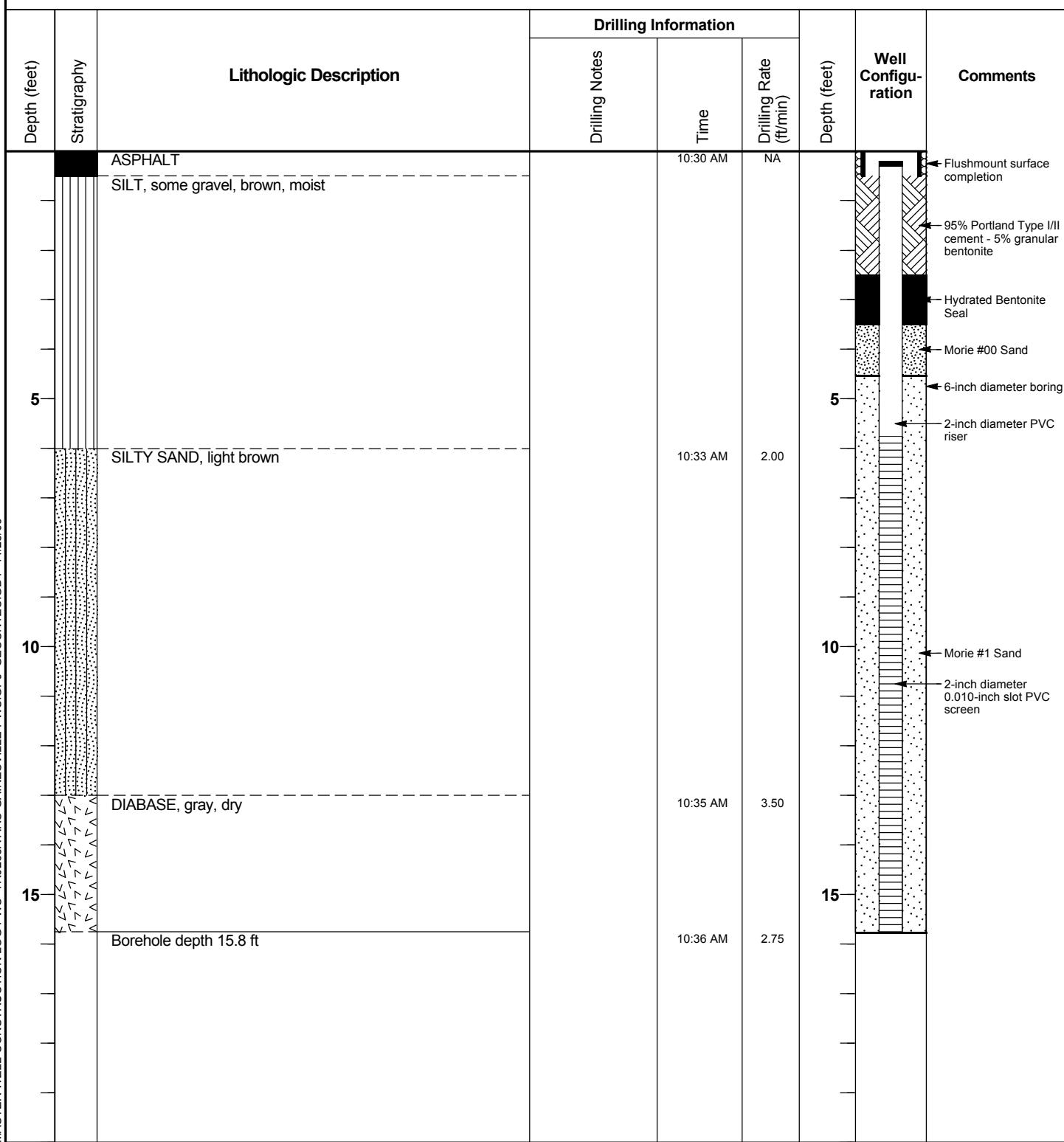
Project No.:	TR0265A	Location:	Gainesville, Virginia
Client:	ARC Gainesville	Coordinates:	N 6,970,411 E 11,745,128
Logged By:	M. Lonardo-Roy	Borehole Diameter:	10-inch / 6-inch
Reviewed By:	E. Jensen	Site Datum:	NAD1983 StatePlane Virginia N FIPS 4501 ft
Driller:	Eichelbergers, Inc. (C. Kurtz)	Ground Surface Elevation:	271 ft amsl
Drilling Method:	Air Rotary	Top Casing Elevation:	Not Applicable
Well Material:	Not Applicable (abandoned)	Start Date - End Date:	30 June 2009 - 1 July 2009



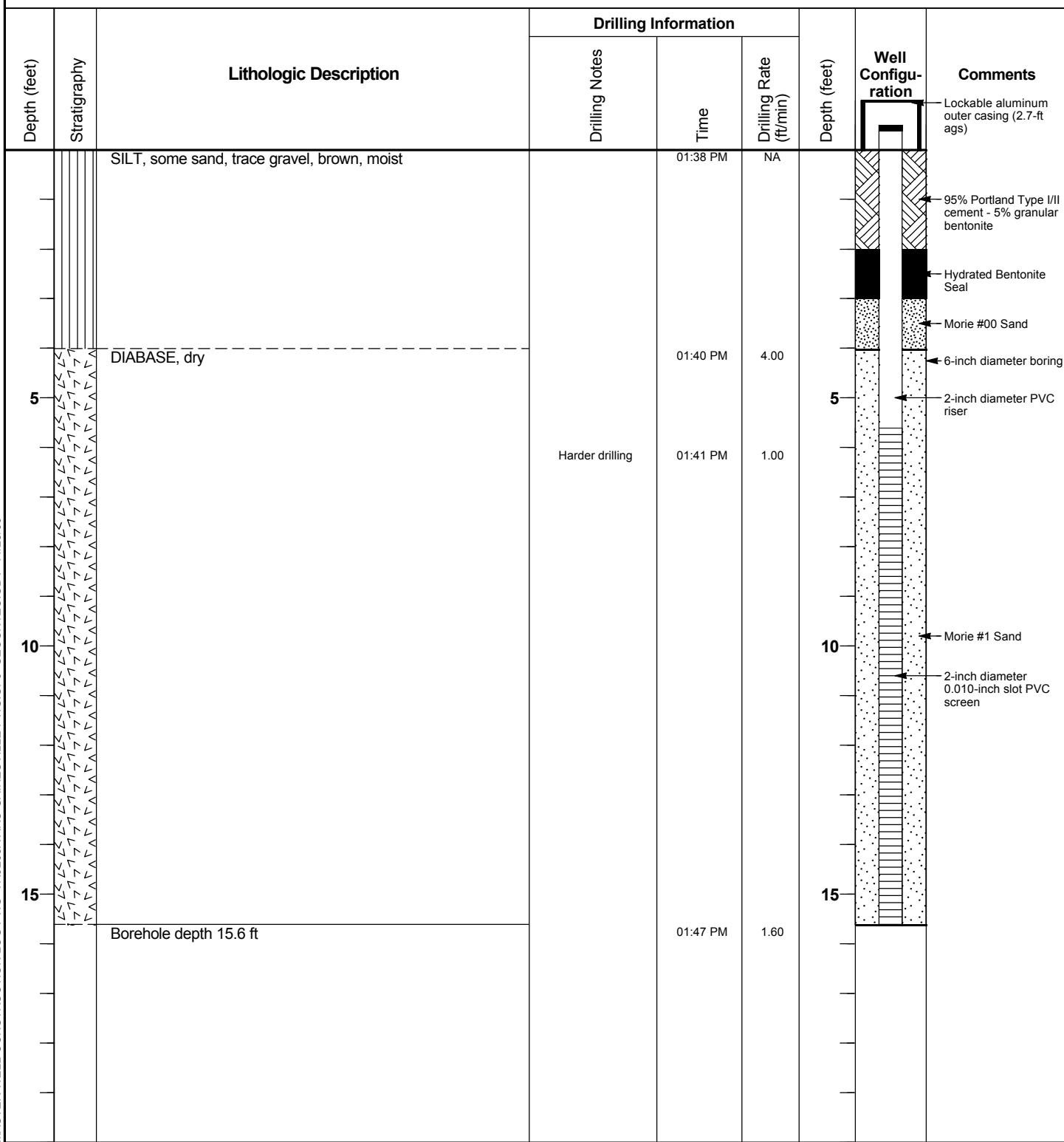
Project No.:	TR0265A	Location:	Gainesville, Virginia
Client:	ARC Gainesville	Coordinates:	N 6,970,954 E 11,744,323
Logged By:	M. Lonardo-Roy	Borehole Diameter:	6-inch
Reviewed By:	E. Jensen	Site Datum:	NAD1983 StatePlane Virginia N FIPS 4501 ft
Driller:	Eichelbergers, Inc. (C. Knaub)	Ground Surface Elevation:	290 ft amsl
Drilling Method:	Air Rotary	Top Casing Elevation:	289 ft amsl
Well Material:	PVC	Start Date - End Date:	21 July 2009 - 21 July 2009



Project No.:	TR0265A	Location:	Gainesville, Virginia
Client:	ARC Gainesville	Coordinates:	N 6,970,659 E 11,744,730
Logged By:	M. Lonardo-Roy	Borehole Diameter:	6-inch
Reviewed By:	E. Jensen	Site Datum:	NAD1983 StatePlane Virginia N FIPS 4501 ft
Driller:	Eichelbergers, Inc. (C. Knaub)	Ground Surface Elevation:	281 ft amsl
Drilling Method:	Air Rotary	Top Casing Elevation:	280 ft amsl
Well Material:	PVC	Start Date - End Date:	21 July 2009 - 21 July 2009



Project No.:	TR0265A	Location:	Gainesville, Virginia
Client:	ARC Gainesville	Coordinates:	N 6,970,407 E 11,745,128
Logged By:	M. Lonardo-Roy	Borehole Diameter:	6-inch
Reviewed By:	E. Jensen	Site Datum:	NAD1983 StatePlane Virginia N FIPS 4501 ft
Driller:	Eichelbergers, Inc. (C. Knaub)	Ground Surface Elevation:	268 ft amsl
Drilling Method:	Air Rotary	Top Casing Elevation:	271 ft amsl
Well Material:	PVC	Start Date - End Date:	21 July 2009 - 21 July 2009



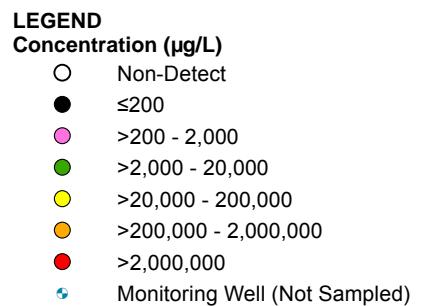
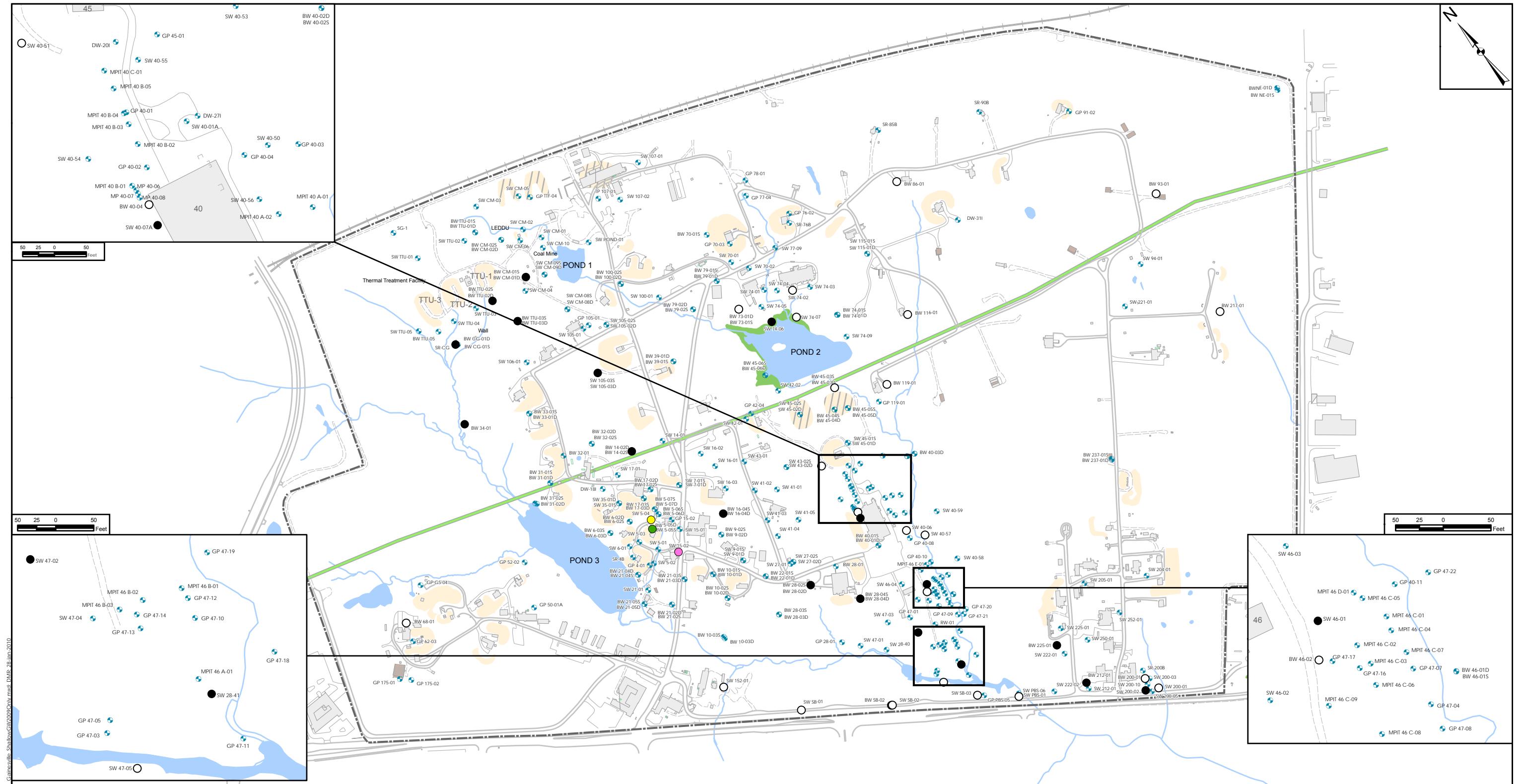
ATTACHMENT E.2

Shallow Groundwater COPC Distribution Maps

Attachment E.2

List of Figures

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Notes:

Concentrations are referenced to the U.S. EPA Maximum Contaminant Levels
 $\mu\text{g/L}$ - micrograms per liter
Concentrations reported correspond to most recent 2009 data at each sampling location.
Shallow aquifer includes groundwater encountered in overburden, saprolite and the upper weathered diabase bedrock.
TTU - Thermal Treatment Unit
LEDDU - Large Explosive Device Deactivation Unit

Distribution of 1,1,1-Trichloroethane in Shallow Aquifer

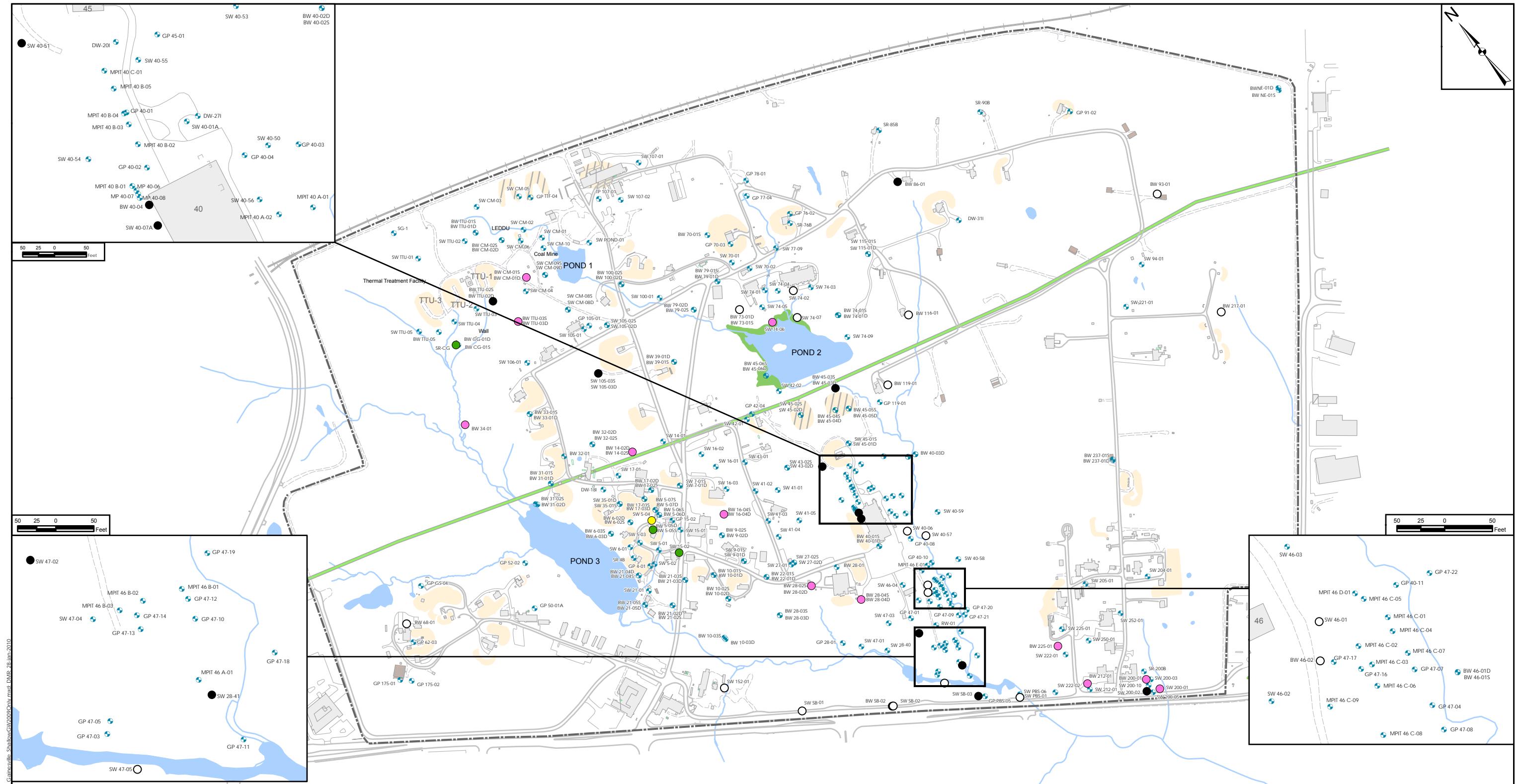
Atlantic Research Corporation, Gainesville, Virginia

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Figure
E2.1

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May 2010



LEGEND
Concentration ($\mu\text{g/L}$)

- Non-Detect
- ≤ 2.4
- $> 2.4 - 24$
- $> 24 - 240$
- $> 240 - 2,400$
- $> 2,400 - 24,000$
- $> 24,000$
- Monitoring Well (Not Sampled)

— Site Boundary ■ Building
 — Paved Road ■ Former Building
 - - Unpaved Road ■ Wetland
 — Pavement ■ High Pressure Gas line
 — Parking ■ Berm
 - - Railroad Track ■ Historic Burn Area / TTU
 — Tank ■ Pond

Notes:

Concentrations are referenced to the Region III risked-based criteria for tapwater ($2.4 \mu\text{g/l}$).

$\mu\text{g/L}$ - micrograms per liter
 Concentrations reported correspond to most recent 2009 data at each sampling location.

Shallow aquifer includes groundwater encountered in overburden, saprolite and the upper weathered diabase bedrock.

TTU - Thermal Treatment Unit
 LEDDU - Large Explosive Device Deactivation Unit

500 250 0 500
 Feet

Distribution of 1,1-Dichloroethane in Shallow Aquifer

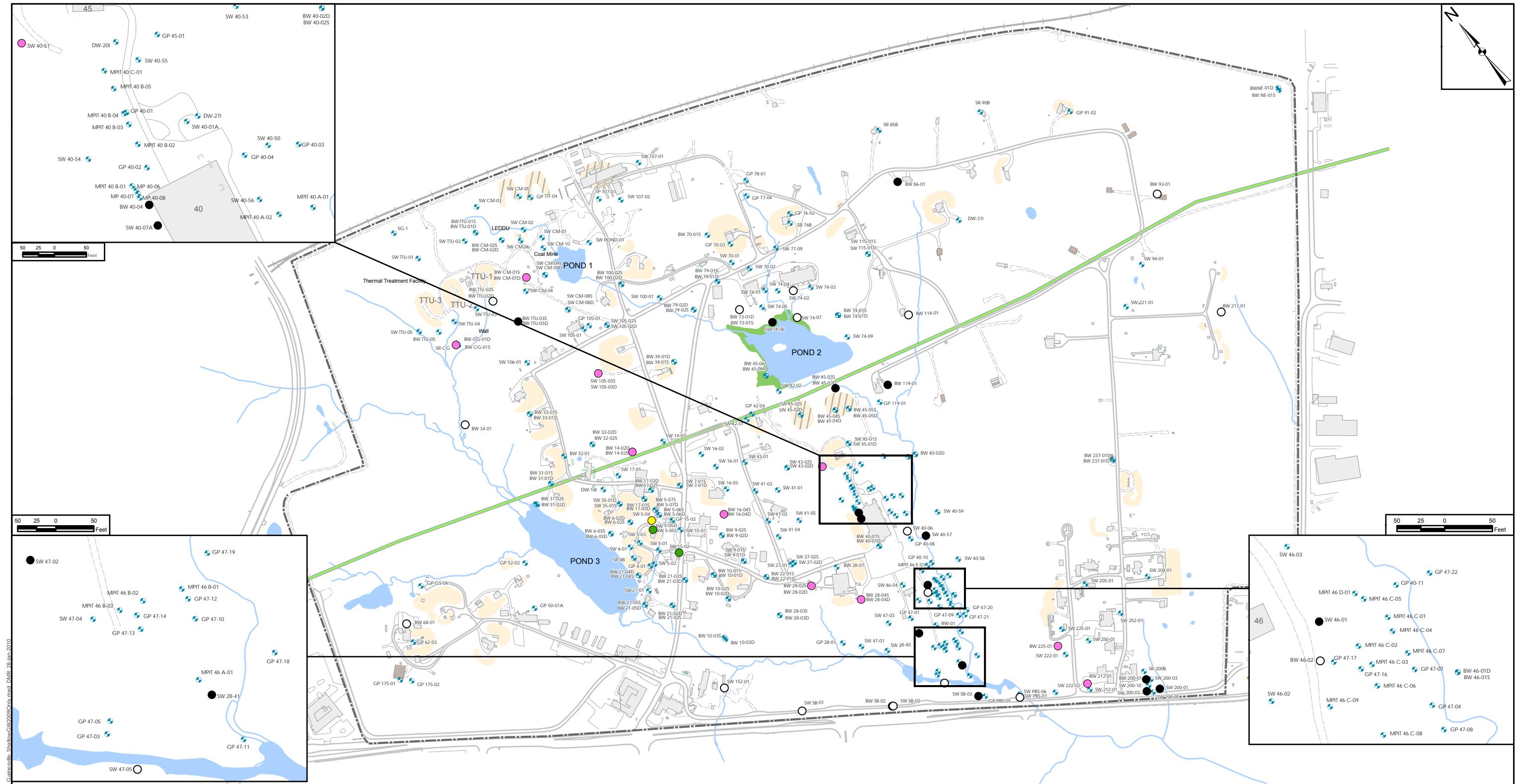
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 consultants

Figure
E2.2

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May 2010



LEGEND
Concentration ($\mu\text{g/L}$)

- Non-Detect
- ≤ 7
- $>7 - 70$
- $>70 - 700$
- $>700 - 7,000$
- $>7,000 - 70,000$
- $>70,000$
- Monitoring Well (Not Sampled)

— Site Boundary ■ Building
 — Paved Road ■ Former Building
 — Unpaved Road ■ High Pressure Gas line
 — Pavement ■ Berm
 — Parking ■ Historic Burn Area /TTU
 — Railroad Track ■ Wetland
 — Surface Water
 ■ Tank

Notes:

Concentrations are referenced to the U.S. EPA Maximum Contaminant Levels.

$\mu\text{g/L}$ - micrograms per liter
 Concentrations reported correspond to most recent 2009 data at each sampling location.

Shallow aquifer includes groundwater encountered in overburden, saprolite and the upper weathered diabase bedrock.

TTU - Thermal Treatment Unit
 LEDDU - Large Explosive Device Deactivation Unit

500 250 0 500
 Feet

Distribution of 1,1-Dichloroethene in Shallow Aquifer

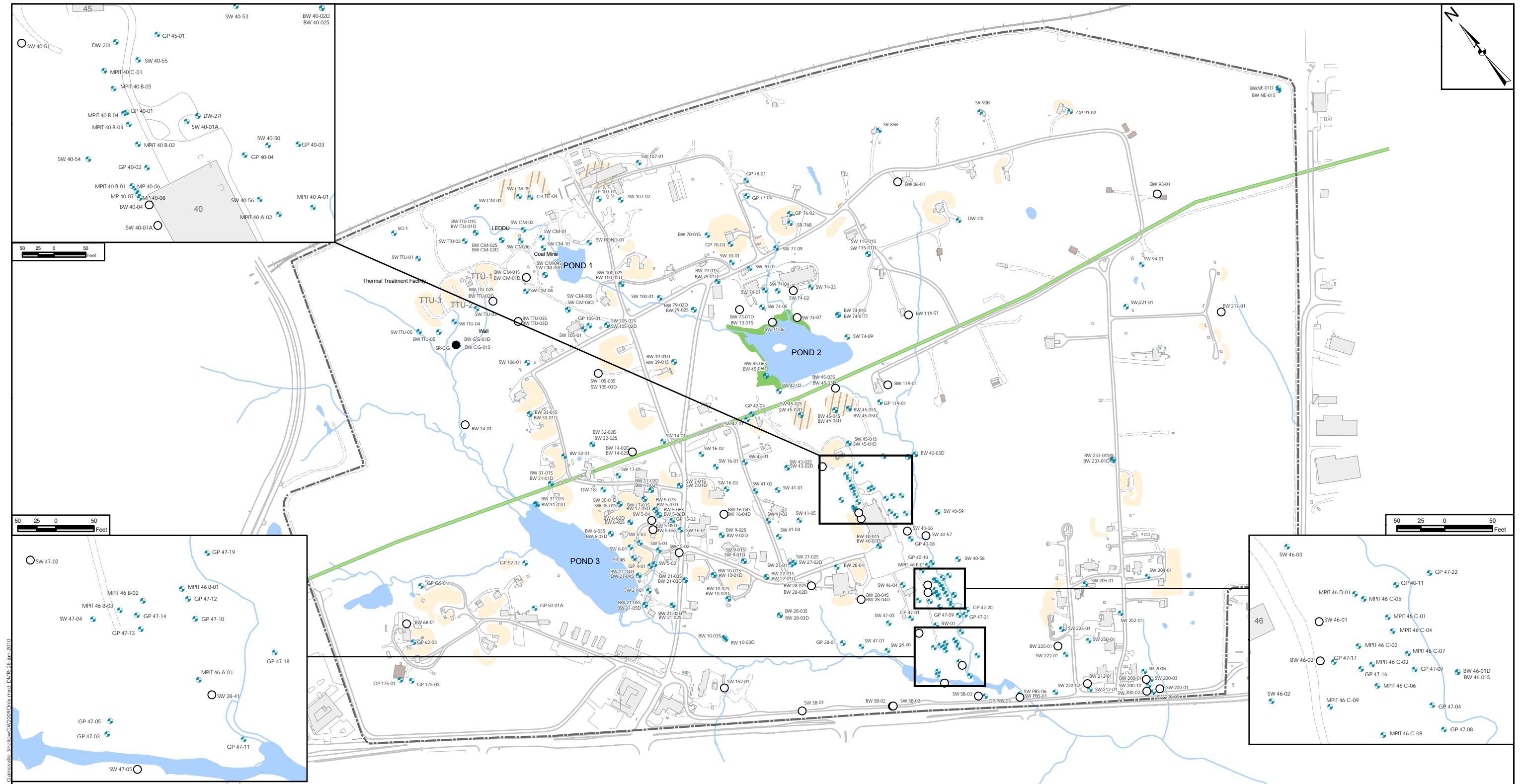
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Figure
E2.3

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P:\PRA\Projects\VA02645_ARE Gainesville\Data\Shallow\Shallow2009.mxd D:\R\VA02645_ARE Gainesville\Shallow\Shallow2009.mxd D:\R\VA02645_ARE Gainesville\Shallow\Shallow2009.mxd

LEGEND

Concentration ($\mu\text{g/L}$)

- Non-Detect
- $\leq 2,100$
- $> 2,100 - 21,000$
- $> 21,000 - 210,000$
- $> 210,000 - 2,100,000$
- $> 2,100,000 - 21,000,000$
- $> 21,000,000$
- Monitoring Well (Not Sampled)

Site Boundary **Building** **Wetland**
Paved Road **Former Building** **Pond**
Unpaved Road **High Pressure Gas line**
Pavement **Berm**
Parking **Historic Burn Area / TTU**
Railroad Track **Surface Water**
Tank

Notes:

Concentrations are referenced to the Region III risk-based criteria for tapwater (21,000 $\mu\text{g/L}$) with a hazard quotient of 0.1 applied.

$\mu\text{g/L}$ - micrograms per liter

Concentrations reported correspond to most recent 2009 data at each sampling location.

Shallow aquifer includes groundwater encountered in overburden, saprolite and the upper weathered diabase bedrock.

TTU - Thermal Treatment Unit

LEDDU - Large Explosive Device Deactivation Unit

500 250 0 500
Feet

Distribution of Chloroethane in Shallow Aquifer

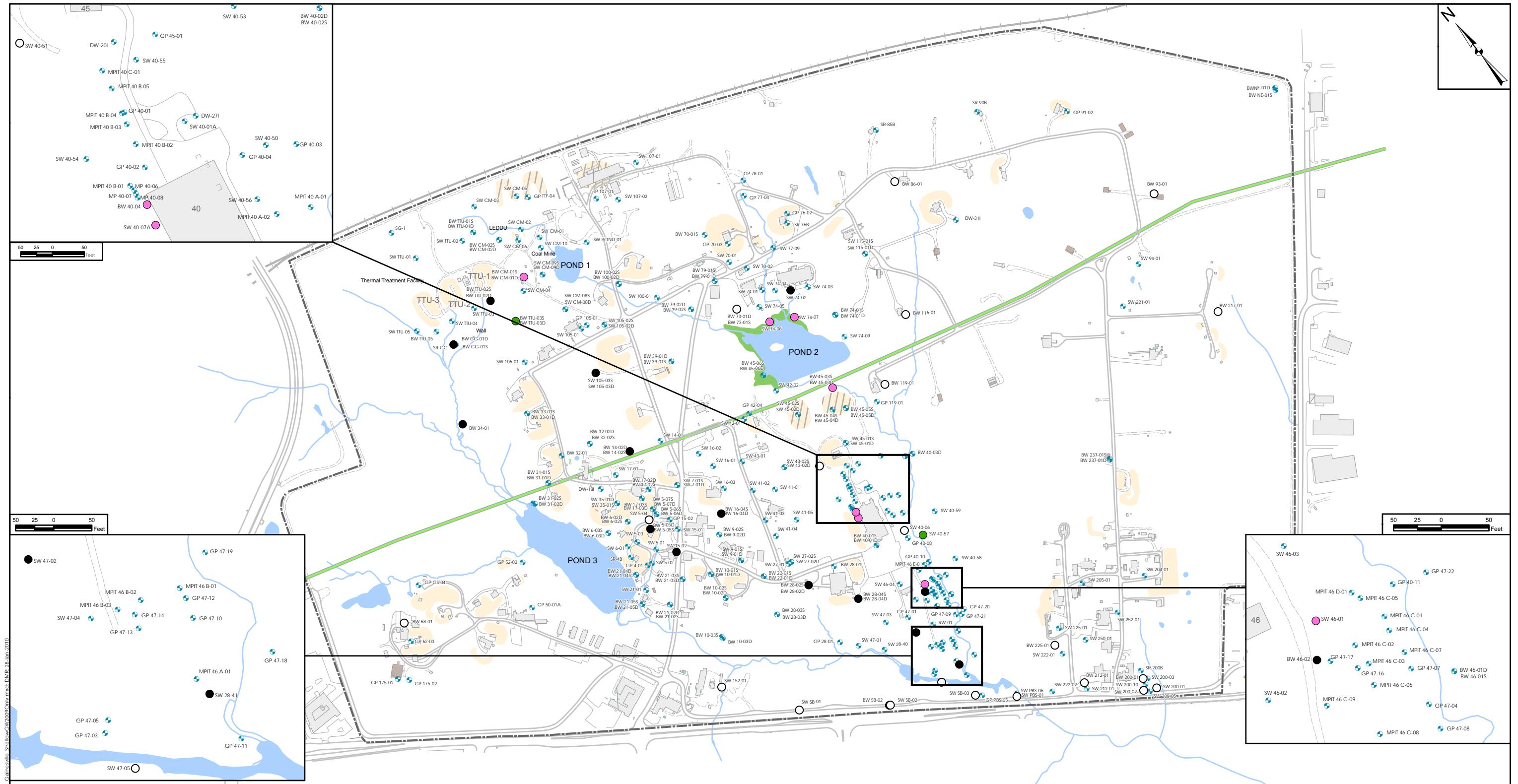
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Figure
E2.4

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May 2010



LEGEND
Concentration ($\mu\text{g/L}$)

- Non-Detect
 - ≤37
 - >37 - 370
 - >370 - 3,700
 - >3,700 - 37,000
 - >37,000 - 370,000
 - >370,000
 - Monitoring Well (Not Sampled)

The legend includes the following entries:

- Site Boundary: Dashed black line
- Paved Road: Solid grey line
- Unpaved Road: Dashed grey line
- Pavement: Solid grey line
- Parking: Solid grey line
- Railroad Track: Solid grey line with a cross symbol
- Task: Text label only
- Building: Light grey rectangle
- Former Building: Brown rectangle
- High Pressure Gas line: Green line
- Berm: Tan rectangle
- Historic Burn Area / TTU: Diagonal hatching
- Surface Water: Blue line
- Wetland: Green rectangle
- Pond: Blue rectangle

Notes:

Concentrations are referenced to the Region III risk-based criteria for tapwater (370 µg/L) with a hazard quotient of 0.1 applied.

$\mu\text{g/L}$ - micrograms per liter
Concentrations reported correspond to most recent 2009 data at each sampling location.

Shallow aquifer includes groundwater encountered in overburden, saprolite and the upper weathered diabase bedrock.

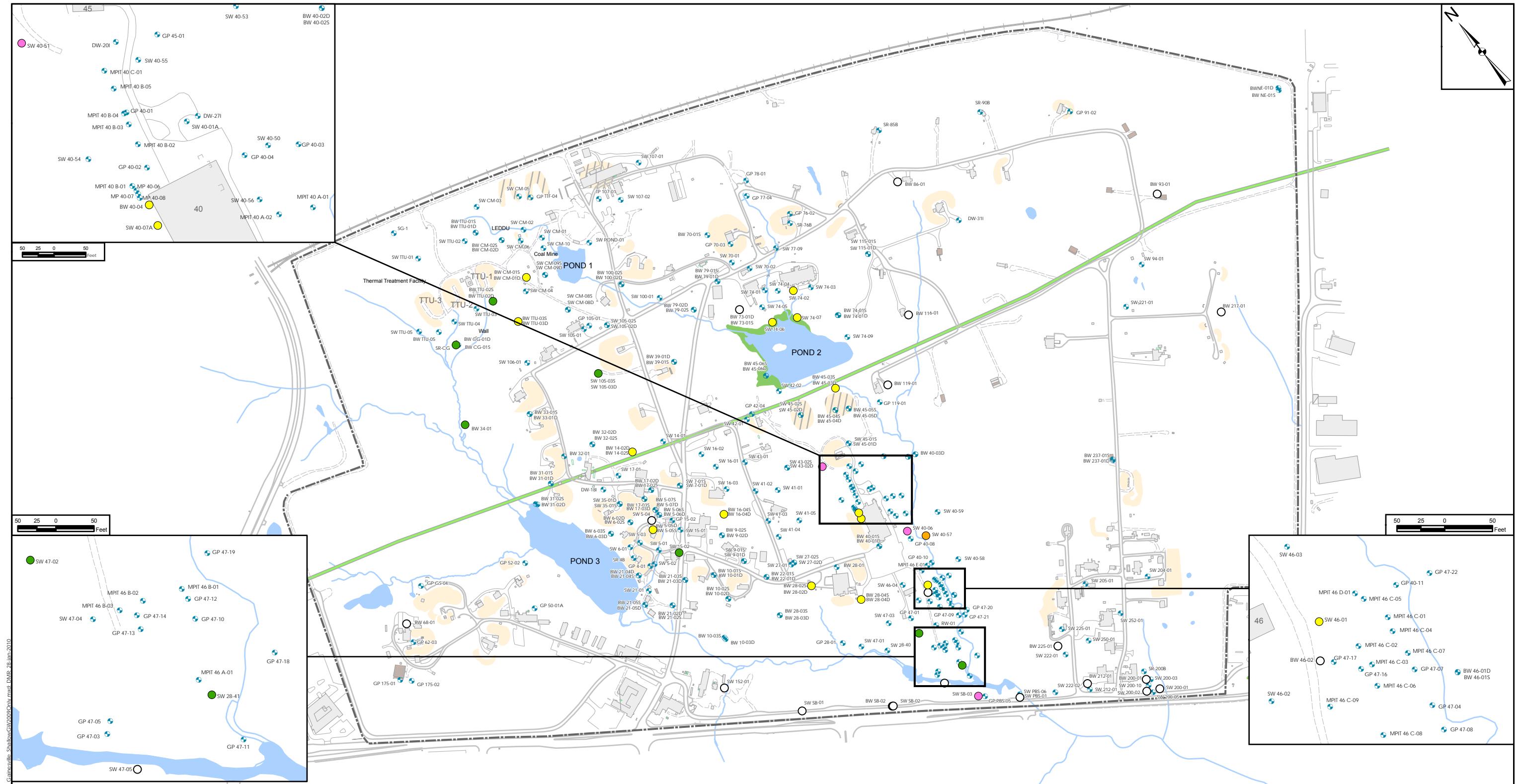
TTU - Thermal Treatment Unit
LEDDU - Large Explosive Device Deactivation Unit

Distribution of cis-1,2-Dichloroethene in Shallow Aquifer

Atlantic Research Corporation, Gainesville, Virginia

Geosyntec consultants

Figure E2.5



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LEGEND

Concentration ($\mu\text{g/L}$)

- Non-Detect
- ≤ 8
- $> 8 - 80$
- $> 80 - 800$
- $> 800 - 8,000$
- $> 8,000$
- Monitoring Well (Not Sampled)

- Site Boundary
- Paved Road
- Unpaved Road
- Pavement
- Parking
- Railroad Track
- Tank
- Building
- Former Building
- Berm
- Historic Burn Area / TTU
- High Pressure Gas line
- Wetland
- Pond
- Surface Water

Notes:

Concentrations are referenced to the method detection limit (0.8 $\mu\text{g/L}$).

$\mu\text{g/L}$ - micrograms per liter
Concentrations reported correspond to most recent 2009 data at each sampling location.

Shallow aquifer includes groundwater encountered in overburden, saprolite and the upper weathered diabase bedrock.

TTU - Thermal Treatment Unit
LEDDU - Large Explosive Device Deactivation Unit

500 250 0 500
Feet

Distribution of Tetrachloroethene in Shallow Aquifer

Atlantic Research Corporation, Gainesville, Virginia

Geosyntec
consultants

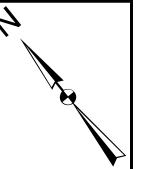
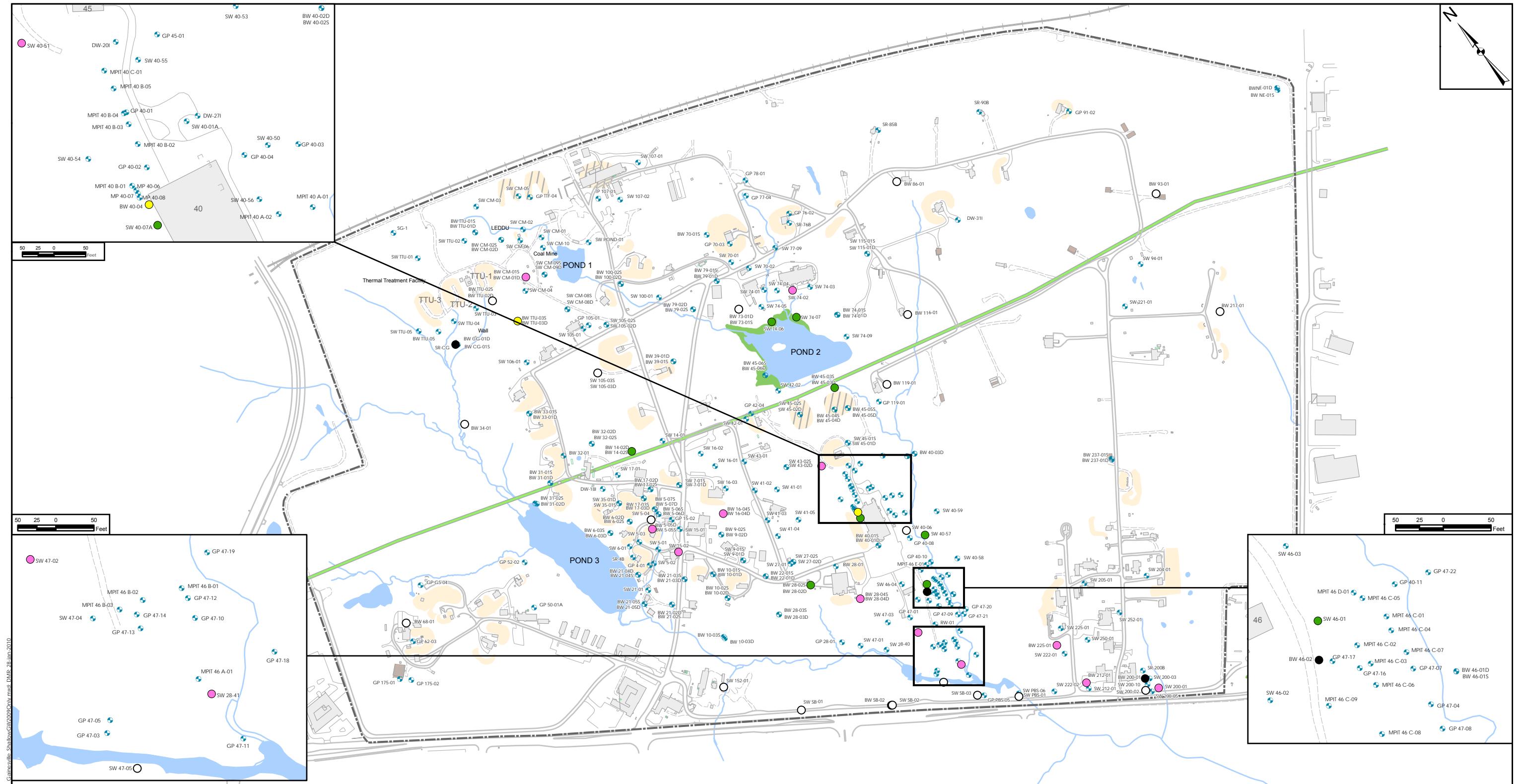


Figure
E2.6

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May 2010



P:\PRA\Projects\VA02645\ArcGis\SiteDatabase\SiteMap.mxd D:\R\VA02645\ArcGis\SiteDatabase\SiteMap.mxd

LEGEND

Concentration ($\mu\text{g/L}$)

- Non-Detect
- ≤ 2
- $>2 - 20$
- $>20 - 200$
- $>200 - 2,000$
- $>2,000 - 20,000$
- $>20,000$
- Monitoring Well (Not Sampled)

Site Boundary **Building** **Wetland**
Paved Road **Former Building** **Pond**
Unpaved Road **High Pressure Gas line**
Pavement **Berm**
Parking **Historic Burn Area / TTU**
Railroad Track **Surface Water**
Tank

Notes:

Concentrations are referenced to the Region III risk-based criteria for tapwater (2 $\mu\text{g/L}$).

$\mu\text{g/L}$ - micrograms per liter
Concentrations reported correspond to most recent 2009 data at each sampling location.

Shallow aquifer includes groundwater encountered in overburden, saprolite and the upper weathered diabase bedrock.

TTU - Thermal Treatment Unit
LEDDU - Large Explosive Device Deactivation Unit

500 250 0 500
Feet

Distribution of Trichloroethene in Shallow Aquifer

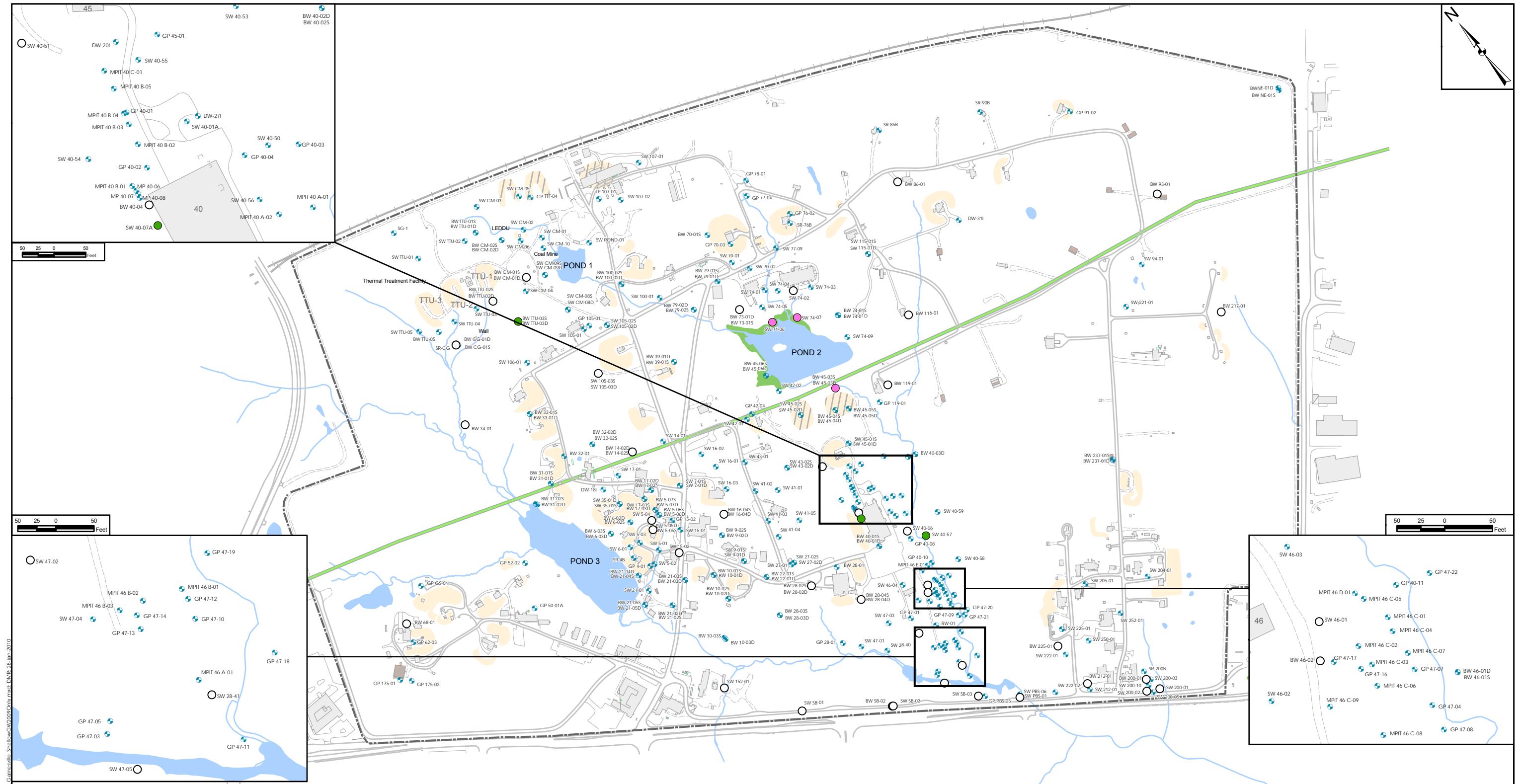
Atlantic Research Corporation, Gainesville, Virginia

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Figure
E2.7

Guelph

May 2010



Notes:

Concentrations are referenced to the method detection limit ($1 \mu\text{g/L}$).

$\mu\text{g/L}$ - micrograms per liter
Concentrations reported correspond to most recent 2009 data at each sampling location.

Shallow aquifer includes groundwater encountered in overburden, saprolite and the upper weathered diabase bedrock.

TTU - Thermal Treatment Unit
LEDDU - Large Explosive Device Deactivation Unit

Distribution of Vinyl Chloride in Shallow Aquifer

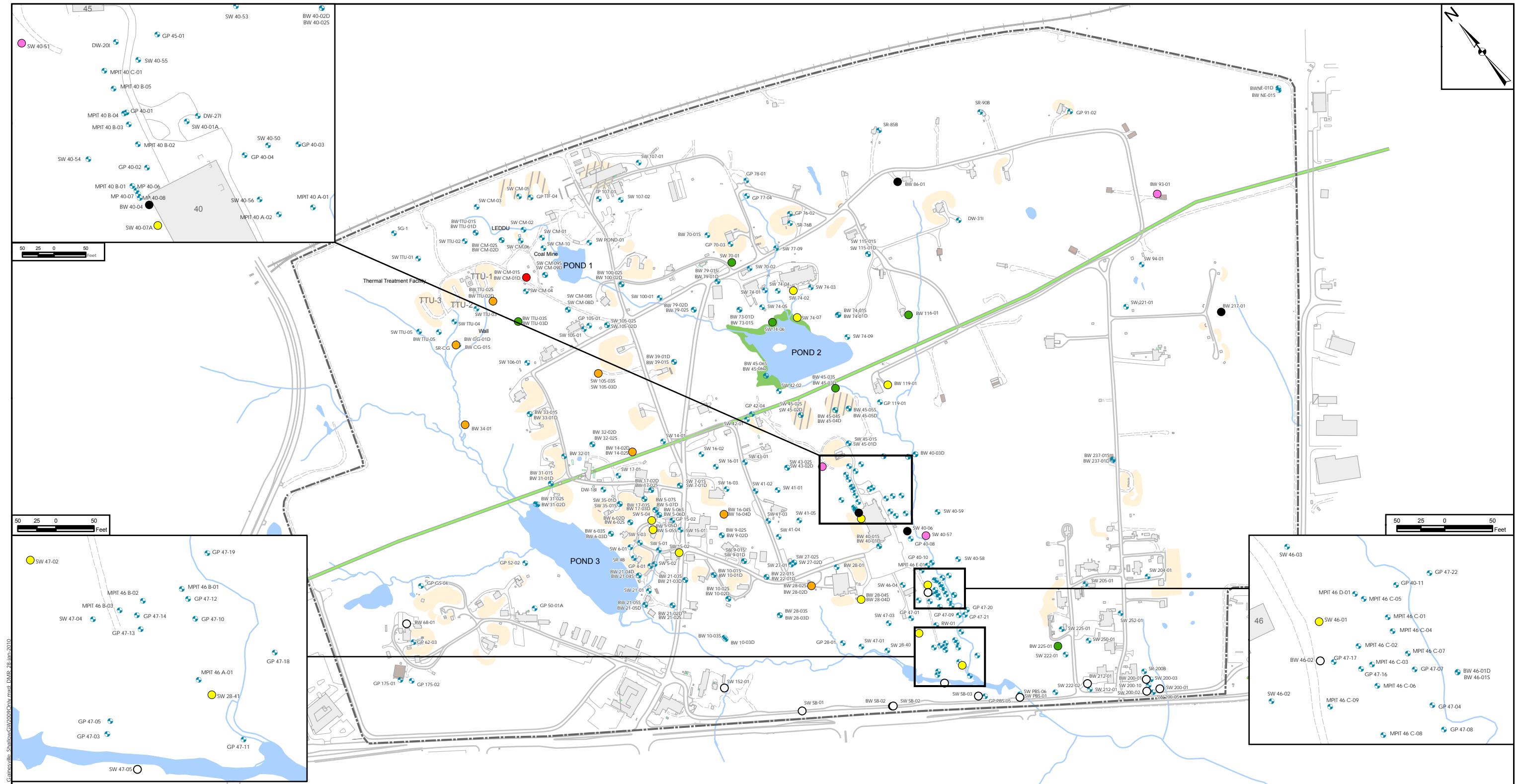
Atlantic Research Corporation, Gainesville, Virginia

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consultants

Figure
E2.8

Guelph

May 2010



P:\PRA\Projects\VA02645\Arc\Gainesville\SiteData\Surveys\Geodatabase\ShallowAquifer.mxd D:\R\VA02645\Arc\Gainesville\SiteData\Surveys\Geodatabase\ShallowAquifer.mxd D:\R\VA02645\Arc\Gainesville\SiteData\Surveys\Geodatabase\ShallowAquifer.mxd

Distribution of Perchlorate in Shallow Aquifer

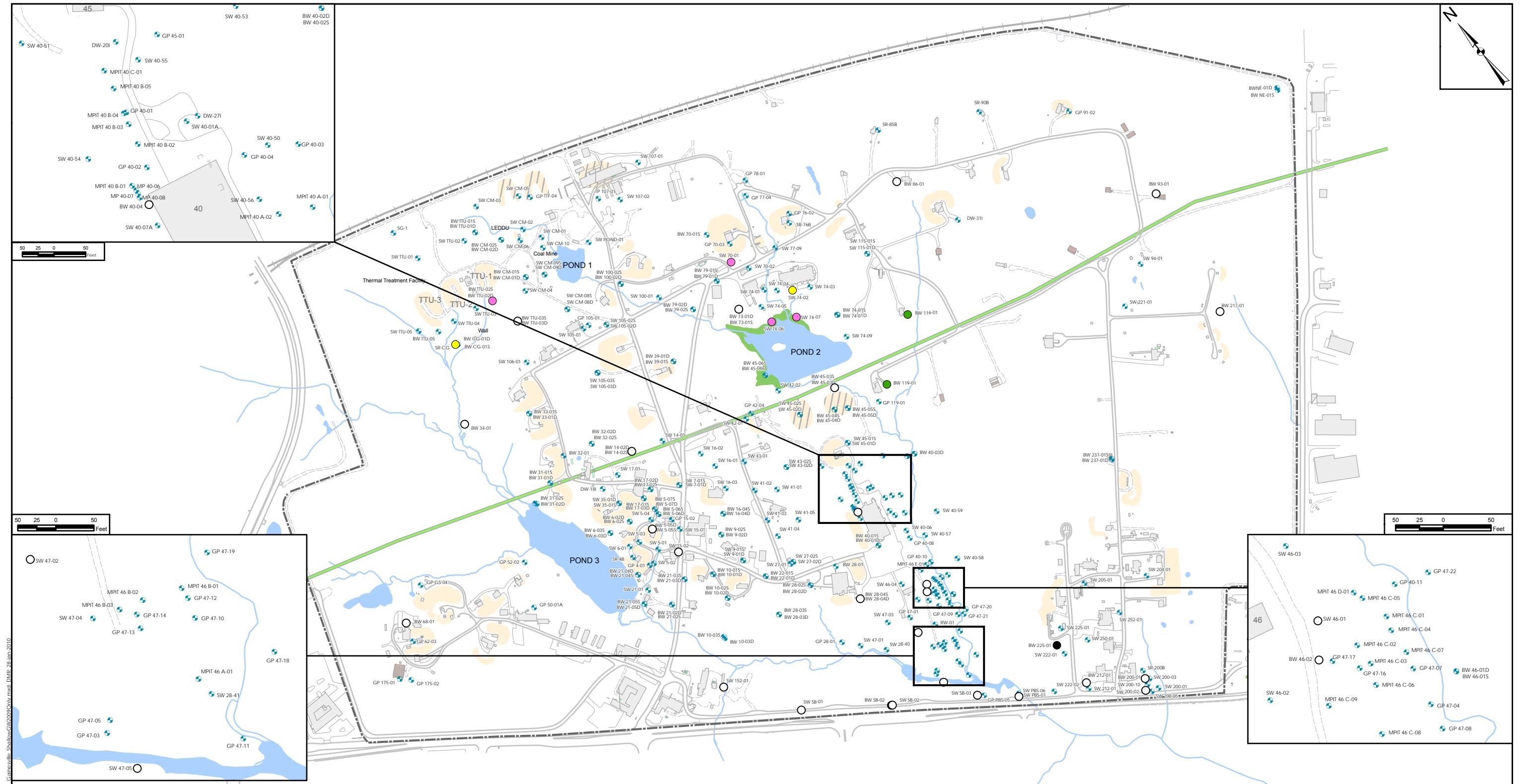
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Figure
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LEGEND
Concentration ($\mu\text{g/L}$)

- Non-Detect
- ≤ 0.61
- $>0.61 - 6.1$
- $>6.1 - 61$
- $>61 - 610$
- $>610 - 6,100$
- $>6,100$
- Monitoring Well (Not Sampled)

Site Boundary
Paved Road
Unpaved Road
Pavement
Parking
Railroad Track
Tank
Building
Former Building
High Pressure Gas line
Berm
Historic Burn Area /TTU
Wetland
Pond
Surface Water

Notes:

Concentrations are referenced to the Region III risk-based criteria for tapwater ($0.61 \mu\text{g/L}$).

$\mu\text{g/L}$ - micrograms per liter
Concentrations reported correspond to most recent 2009 data at each sampling location.

Shallow aquifer includes groundwater encountered in overburden, saprolite and the upper weathered diabase bedrock.

TTU - Thermal Treatment Unit
LEDDU - Large Explosive Device Deactivation Unit

500 250 0 500
Feet

Distribution of RDX in Shallow Aquifer

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Figure
E2.10

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ATTACHMENT E.3

Shallow Groundwater Time Trends

Attachment E.3

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